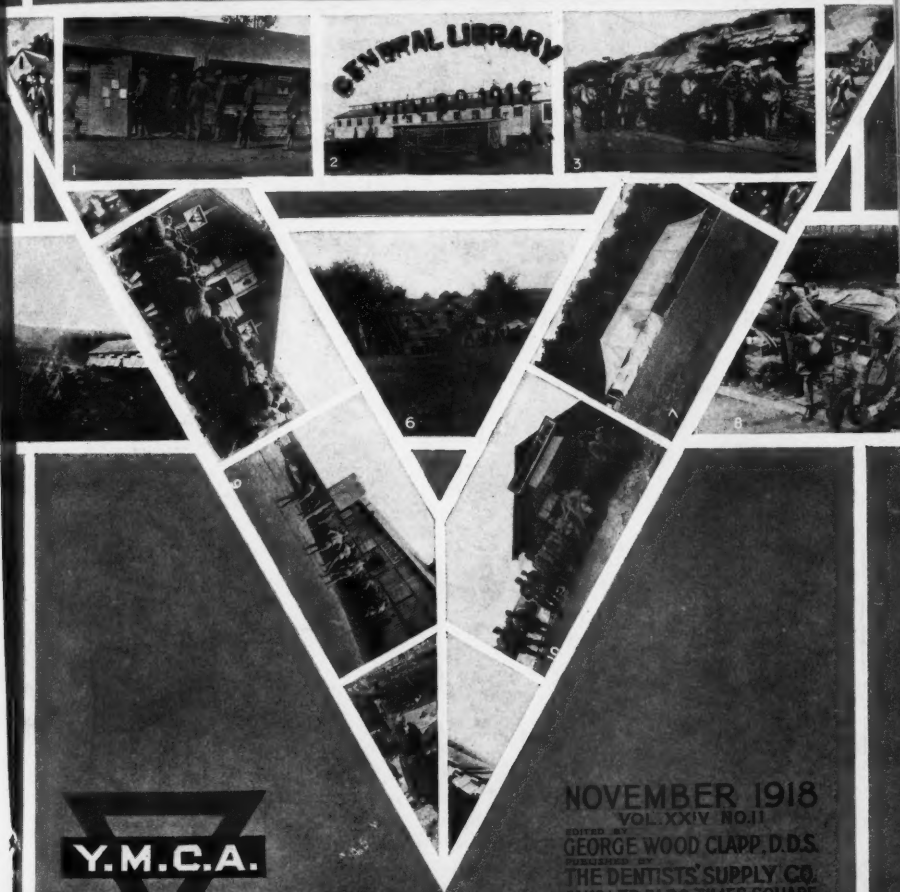


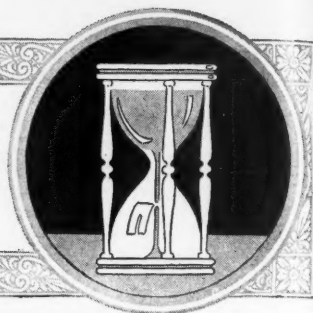
# THE DENTAL DIGEST



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## Which Shall It Be?



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# THE DENTAL DIGEST

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## A CHANGE OF OPINION AS TO ROOT CANAL TECHNIC

E. S. ULSAVER, D.D.S., NEW ROCHELLE, N. Y.

Some thousands of us who are not root canal experts or enthusiasts, but who are compelled to treat root canals as they present, and who desire to treat them well, are divided in opinion between the technic to which we have been accustomed and what may be called the new technic, which has recently been presented in an extended form. If the new technic is enough better to justify the trouble of mastering it and the greatly lengthened time required to practice it, we must have it; if it cannot justify these requirements we prefer to get along without it.

My position is doubtless that of the average dentist. I have been treating putrescent canals for a number of years, with apparent success. Few of the teeth caused any local disturbance after filling was completed and still fewer were lost. I have seen them year in and year out, comfortably in place and discharging well their appointed work. Nor have any of the patients manifested symptoms which would point, even dimly, to these treated teeth as sources of systemic infection. At least an average proportion of these people has been in average health for many years. Under these conditions it has been difficult to attach to the agitation for improved root canal technic the importance which it undoubtedly obtains in the minds of many of its advocates.

The technic which appears to have been satisfactory is in no way remarkable. It consists in opening the putrescent chamber, cleaning it out without making pressure on the pulp canals which might force putrescent material through the apical foramina and sealing in a treatment of Formo-cresol (Dental Chemical Co., Roslyn, Pa.) for two days. At the next sitting the root canals were mechanically cleaned and as well reamed as circumstance permitted. When all signs of putrescence were gone, after as many treatments as were required, the canals were filled with a paste which I have used with apparent success for many years. It is made by mixing materials in the following proportions, by weight: Oxide of zinc, 3 parts; Tannic acid, 1 part; creosote to make a paste. The paste thus formed was allowed to "cure" from six to twelve months before using.

This paste, made thin enough by the addition at the time of use of the necessary amount of creosote, was worked into the roots by a worn barbed broach and a root canal point was forced into each canal, as far toward the apex as it could be gotten.

Not infrequently a tooth was sensitive to the touch for two or three days following the root fillings, but severe inflammation was rare and active abscess practically unknown. When it was convenient, the temporary filling in the crown cavity was removed and the permanent filling placed.

The office records show hundreds of teeth to have been filled in this way. I see the teeth at moderate intervals, when patients present for other work. They have not given signs of local disturbance, they have not been touched by another dentist and they are comfortable and efficient in mastication.

#### THE ATTITUDE OF THE PHYSICIANS

Into this apparently highly satisfactory condition, other factors have been so effectively thrust that my view of the technic described and of its results has been greatly changed and another technic has been substituted, with the expectation that it will justify itself in the office and in the welfare of the patients. It may be profitable to follow practitioners who occupy the same mental position to get the new viewpoint from one who stands on their level, who has no longing for fame and who does not care to make propaganda for any special technic.

Perhaps the first disturbing element was the attitude of certain physicians whose professional knowledge and skill I have reason to regard highly. These men are not superficial, they do not seize upon each new idea as an excuse for insufficient investigation and study. They are well read, intelligent, industrious and very conscientious. And when they sent persons suffering from certain systemic conditions to the office for examination of the teeth; and following that, returned the persons with instructions to have certain suspicious teeth extracted, and when the extraction resulted in the prompt and perhaps complete cessation of the systemic disturbance, it gave one "furiously to think."

I have read so many instances of marvellous cures following the treatment of putrescent teeth (usually by some particular method) that I was rather prejudiced against the stories, the technic and the expectations which such stories might easily arouse in the minds of persons suffering from afflictions located far from the teeth. But demonstrations in my own practice, where I know all the occurrences, have given the subject a different aspect. Let me tell of two or three.



Mr. A., of middle age and in good general health, was occasionally prostrated by headaches of such severity that he was helpless for days at a time. No cause was discernible. He took good care of his teeth. Two lower molars crowned 17 years ago had been comfortable and useful since that time and had never caused the slightest local disturbance.

On the chance that the roots might not have been properly filled, they were X-rayed. The showing justified opening them. Both were found putrescent. They were treated, filled and recrowned. One or two headaches of reduced severity followed. During the last two years no headaches have occurred.

The second illustration is that of a patient who suffered from severe inflammation of the articulating membranes of the knee joint, so that the knee was kept in a plaster cast for several months, without benefit. The patient became discouraged at the outlook and changed doctors. The new doctor suggested that the teeth might be at fault. An X-ray examination disclosed what appeared to be a perfectly sound tooth with a large apical abscess. The tooth was extracted, a serum was made from a culture from the abscess. Within a very short time the condition of the knee began to improve, and a few months later the recovery was complete.

The third case is that of a young man who suffered from frequent severe headaches and has been treated for them by nose and throat specialists, by osteopaths and by eye specialists, without benefit. An upper left lateral was discovered to be abscessed. It was treated and filled. During the weeks since the tooth was filled the patient's condition has improved as to the frequency and severity of the headaches, but the time is too short to enable one to say that a cure has been established. One of the interesting features of this case was the fact that every agitation of the root, during the treatment, caused one of the headaches.

These evidences of what may occur when putrescent roots are discharging toxins into the body and may be cured by the removal of the focus, suggest that roots of which the apical portion may be incompletely filled may become septic foci for continuous attacks on the patient's vitality.

It is one of the drawbacks of the root paste described above that it is not radio-opaque and therefore does not make a shadow, so that one cannot tell in the radiograph whether or not the root is completely filled. This leaves unanswered the question whether or not one has left possible foci of infection, in the form of roots with unfilled apices. Such unanswered questions knock insistently on the door of one's mind and demand satisfaction.

In order to answer the question as to whether or not I was properly

filling roots, and either support the old method or adopt the new, I took a post graduate course in what may be called "recent root canal technic," to learn to fill roots so that they would radiograph and prove when they were completely filled. At the end of the course I was completely discouraged and dreaded to see a patient present with a putrescent tooth. I wished that I might never have to treat another putrescent canal. I did not feel safe to go back to the old treatment or competent to handle the new.

#### EXPERIENCES WITH MY OWN TEETH

Eight years ago one of my lower molars was treated by the method described in the first part of this paper. At intervals since that time it had been sensitive to pressure but I always attributed the discomfort to general physical conditions. Shortly after I finished the root canal course, I felt considerable pain about the teeth which seemed to either originate in the region of the lower molar or to be reflected to that region, though I could not localize it. Believing the lower molar to be at fault, it was opened, but no relief resulted. Three days later it developed that an upper lateral was abscessed. Opening of the lateral was followed by immediate relief of the pain. As the canals of both teeth were now open, I decided to go to the dentist under whom I had taken the post graduate course and experience the new treatment from the patient's point of view.

If my experience with these teeth is any criterion, the new technic is worse from the patient's point of view than from the dentist's. The dentist spent, in all, six hours in getting through the apices of the roots, getting the root canals sterile and in filling them. Following one of the treatments of the molar I suffered a violent toothache for one and one half hours. Following another, I suffered two days, when, being unable to stand it longer, the tooth was opened. The treatment of the lateral did not cause pain, but both teeth were too sensitive to pressure to permit eating upon them for three weeks after the roots were filled. It seemed to me that if this were an average result, few patients would have the second root filled by the new technic. At the end of about three weeks the soreness had left the lower molar and since that time it has been more comfortable than at any time during the past eight years. I now know that it was never really well during all that time. Now I cannot distinguish it from the vital teeth.

#### THE TECHNIC IN THE OFFICE

I have now adopted the new technic in the treatment of putrescent teeth and have reached the stage where I no longer dread such work. In some cases the root canals can be filled without causing suffering to the

patient, while in others, patients suffer a great deal. The filling of the roots nearly always causes pain due to the forcing of the chloropercha through the end of the root. Practically all patients are willing to submit to the pain for the sake of having the roots properly filled.

Every step in the new technic requires a little more time than a corresponding step in the old technic. The work is done under as nearly aseptic conditions as possible. The rubber dam is applied for each treatment. The field is thoroughly sterilized with iodine and the rubber dam and field are then washed with alcohol. All instruments are previously rendered sterile and prevented from coming into contact with objects which have not been sterilized. Guttapercha points are placed, when received from a dealer, in a 10 per cent. solution of formaldehyde for 24 hours and are then removed and placed in the formaldehyde sterilizer. Cotton points are sterilized in a Pentz sterilizer and are then placed in the formaldehyde sterilizer for keeping.

In order to equip the office for the proper performance of the new technic, equipment to the value of about one thousand dollars was purchased, including an X-ray machine, an ionizing machine, a high frequency machine, a steam sterilizer, a formaldehyde sterilizer and the necessary instruments.

The time required for the new technic is much greater than that required in the old, care-free days. The treatment of putrescent, single rooted tooth and the filling of the root canal rarely requires less than two hours, while putrescent molars frequently require from six to eight hours each. The requirements of the new technic necessitate that fees for root canal treatment and root fillings should be established upon an hour basis. One is powerless to make intelligent advance estimate because one cannot tell what will develop. Patients are willing to pay the greatly increased fees necessitated by the new technic in order to have the roots satisfactorily filled.

As a reward for the expenditure of the money required for equipment and of some months of study, labor and anxiety, I am now getting back to a condition where I feel comfortable in regard to root filling, because, in most cases, I can demonstrate that the root is so completely filled that no opportunity remains for the establishment of a focus for a systemic infection.

87 CENTRE AVENUE.



## HABIT IN THE SELECTION OF TOOTH FORMS

BY GEORGE WOOD CLAPP, D.D.S., NEW YORK

(THIRD PAPER)

### THE PRINCIPLES OF TOOTH SELECTION

When Dr. Williams isolated the three typical forms in human teeth, and their more serviceable combinations in artificial teeth, he unknowingly began the removal of the difficulties which have always hedged about the selection of teeth to effect fine restorations. Because he has done an immense amount of work on this subject which is scientific in character, remarkable in its nature and of the greatest importance to prosthodontists, it will be well to here tell the story.

### THE IMPORTANCE OF A SCIENTIFIC METHOD OF SELECTION

It is a matter of constantly recurring surprise that dentists who wish to do pleasing prosthetic work, or to do satisfactory work with the least trouble, manifest so little interest in mastering a method of selecting that tooth form which will give best results in any given case. Every such dentist when shown the typical forms in teeth and how Nature has modified and used those forms in upper laterals and cuspids to give dentures a fine appearance, becomes enthusiastic. A new world of appreciation and possibilities is opened to him and he feels that whether or not his patients fully appreciate his labors, the results justify all the attention and skill he can bestow and elevate his achievements to a truly professional plane.

Yet when attention is carried a step further, to the method of tooth selection which makes such results possible, it is very common for him to satisfy himself with an expression of appreciation and to permit his interest to flag before he masters the application of the principles of selection.

If it is conceded that the goal of all this work is the completed denture in place in the mouth and that it cannot be satisfactorily completed unless teeth are well selected; if it be understood that any tooth form is made pleasing in the mouth, not by any form or beauty of its own but by its harmony with the face form; if it be perceived that the finest teeth are of no practical value unless we have correct methods of deciding which tooth form is required for any given case; and if it be remembered that we had no such correct method prior to the method made effective by Dr. Williams, it will be seen that his labors in determining a method of se-

lection are, if anything, of more practical value to the prosthodontist than his labors in the isolation of forms in natural teeth and their reproduction in artificial teeth.

The dentist who approves of Dr. Williams' classification of natural teeth and the production of fine artificial teeth and who waxes enthusiastic about the possibilities of such teeth for his patients and himself, but who is unwilling to take the trouble to master the method of selection may be likened to one who is given a fine automobile, who admires it in whole and in detail, who expatiates on the pleasures he, his family, and his friends will derive from its use, but is unwilling to take the trouble to learn to drive it to the scenes he has so eloquently described.

This figure may be carried even further, for it is not so very uncommon to have some dentist who has waxed enthusiastic over the tooth forms Dr. Williams has produced, say in practically so many words, that he

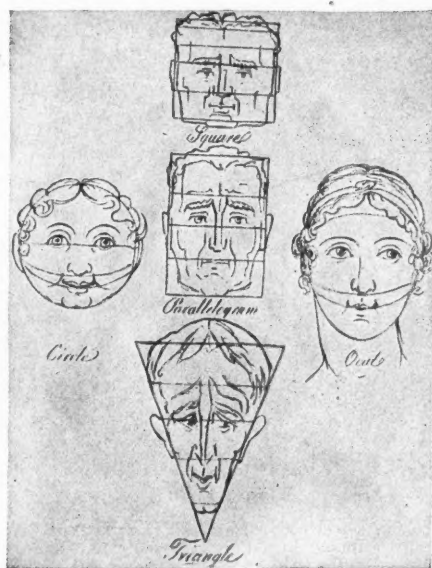


Fig. 4

This illustration from Dr. Wilson's "Dental Prosthetics," shows diagrammatic illustrations of the typical forms of face, as drawn by Madam Schimmelpenninck, more than 100 years ago.

Of these diagrams those marked "Square" and "Parallelogram" are merely different lengths of the square type. Similar differences in length are found in teeth of the square type. The oval form is a combination of the Parallelogram and the circle, the influence of the circular form rounding the cheek and jaw lines of the Parallelogram.

The form here marked "circle" is of course exaggerated. Even the most pronounced forms of this type are more egg-shaped than round, and are properly called "ovoid," meaning egg-like.

does not see any necessity of mastering the principles of selection, because with such beautiful forms one cannot go very far wrong anyway, and that most any of them will do.

If we stick to the figure of the automobile and its owner, this dentist is like one who learns to drive in the low gear and refuses to learn how to drive in intermediate and high because he can go as fast in low as he could with the horses to which he was accustomed as a boy. His statement is



Figs. 5 to 10

Six faces of unlike forms and proportions. All these persons have natural dentures which are pleasing at first glance and upon critical study. An upper central from each set was photographed, enlarged to the width of the photograph of the face at the condyles and imposed on the face as shown. Note the identity of the tooth form and proportions with a part of the face.

true, but if he would once get a taste of the pleasure to be had when driving in high gear, he would never again willingly limit his progress to the low.

All of the foregoing might have been written in fewer words, but in this case few words are not as effective, save to the natural students for whom even such words are hardly necessary. It is sought to make plain to all,



that the esthetic value of any artificial teeth to the dentist and patient depends upon harmony with the remaining natural anteriors or with the face, and is limited by the practical working value of the method used in selecting them for each case. Also that the mastery of such a method requires some time and trouble on the part of the dentist, but unless he is willing to take that trouble he will limit his results unnecessarily, just as with any other technic or appliance in dentistry. It is

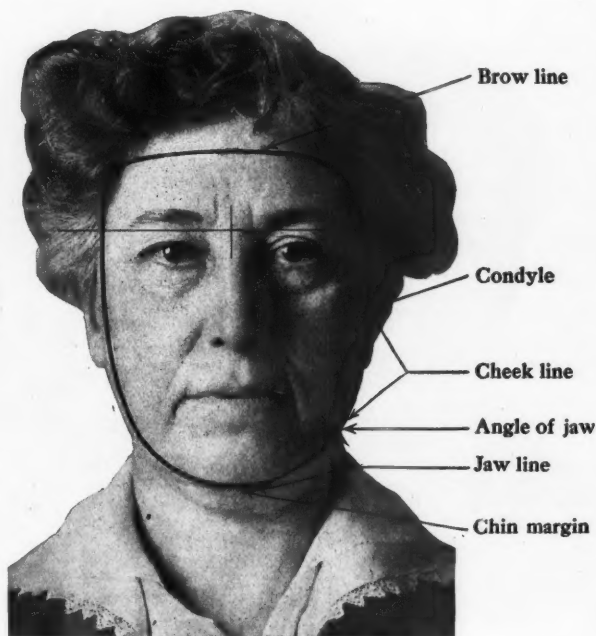


Fig. 11

The identity of the form of the upper central with that of a part of the face is common to too large a proportion of the people to be accidental and too pleasing to be the result of chance. A study of our large collection of photographs shows that when this harmony exists the dentures are pleasing, even though the tooth form, considered alone, is not particularly fine. It shows also that when the tooth form is noticeably unlike the face form, the dentures are not pleasing, no matter how fine the tooth form, considered alone, may be.

The black line on the face shown above, outlines the portion of the face with which the inverted upper artificial central should be identical in proportions and form.

Dentists who have been deterred from using the tapering forms of teeth in tapering faces because of the width of the interdental spaces may be assured that Nature does not hesitate to use much more tapering forms and wider interdental spaces than Dr. Williams has produced, and that their hopes of pleasing restorations are absolutely bound up in the use of the tooth form indicated by the face form.

also desired to show that, thanks to Dr. Williams' labors, a scientific method of selection is now not only available, but is definite in its terms and relatively easy of mastery.

#### SELECTION FOR PARTIAL AND FULL CASES

The method of selection employed depends upon whether or not some of the natural upper anteriors remain. If they do, it is necessary only to



Fig. 12

Fig. 13

Figure 12 shows a face which, in repose, is decidedly square in character.  
Figure 13 shows the natural dentures of the same person.

select artificial anteriors of the same form. If none of the upper anteriors remain to be matched, all consideration of the form of the lost natural teeth is dismissed from mind and those artificial teeth are selected which will appear best when exposed in smiling and speaking.

Dr. Williams has simplified selection in both kinds of cases. He has provided artificial teeth in the 14 most frequently seen natural forms, so that it is easy to select a form like that of the remaining natural centrals or laterals. And he has established and simplified the law for selection in cases where no natural anteriors remain.

## DR. BERRY'S SUGGESTION

In 1903, Dr. F. H. Berry, of Milwaukee, published a suggestion that the outline form of the upper artificial centrals should be like the outline form of a certain part of the face, seen full front. This suggestion was difficult of application because there was an insufficient classification of face forms and because the teeth available were in a host of unrelated, conventional forms, few of which were in any way related to forms in faces. It remained for Dr. Williams to make Dr. Berry's suggestion into



Fig. 14

Figure 14 shows a double photograph. A photograph of one of the upper centrals shown in Figure 13 has been enlarged to the width of the photograph of the face at the condyles, inverted and imposed on the photograph of the face as shown by the shadow. The shadow formed by the picture of the tooth is identical with the outline of the face throughout the area indicated in Figure 11.

One of the surprising things encountered in studies of this sort is the number of cases in which the harmony is as exact as here shown.

a scientific procedure by providing correct tooth forms, by applying a complete and scientific classification to face forms and by showing that Nature has established between face forms and tooth forms a harmony which is too striking, too frequently seen, and too fine to be merely accidental.

## HOW DR. WILLIAMS BEGAN

When Dr. Williams had answered the question, "What forms of artificial teeth are required to make it easy for dentists to effect fine restorations?" he found himself face to face with another question of equal importance, which was, "How shall dentists know which of these forms will achieve the finest effects in any given case?"



Fig. 15



Fig. 16

Figure 15 shows the most decidedly marked form of tapering face found in women, where this form is rarely as severe as is occasionally found in men.

Figure 16 shows the natural dentures.

His mind was now free from the influence of the temperamental theory. He knew that tooth forms could not be selected by the color of the hair, eyes or skin, by the shape of the nose, or by the size of the bony framework of the body. All these had been tried for many years and found wanting.

Dr. Williams is an artist. For many years part of his recreation has consisted in the taking of photographs and in the painting of pictures. The walls of his studio are hung with paintings made in the most beautiful sections of Europe. Every artist is more or less familiar with the art

principles which have been applied to paintings of the human body, especially the face. As an artist, Dr. Williams knew that three types of human face were known to artists, one of which is square in character, and one tapering and one rounding or ovoid. Madam Schimmelpenninck writing more than one hundred years ago, illustrated not only these three types, but the oval modification of the square type as well, as is shown in Figure No. 4. It struck Dr. Williams that there was a remarkable likeness between the facial types recognized by the artists and the typal



Fig. 17

Figure 17 shows a double photograph made by enlarging the photograph of one central, inverting it, and imposing it on the face as shown by the shadow. The identity of the tooth form and proportions with the face form and proportions is quite as exact as in Figures 12, 13, and 14.

forms in teeth. He saw that if a definite relationship between the form of the face and the form of the upper central incisors could be proven, a method of tooth selection would be established on an unassailable scientific foundation. As the result of some rather remarkable investigations, he has been able to establish that relationship to an extent which could not be foreseen.



Fig. 18

Fig. 19

Figure 18 shows a fine oval face. Figure 19 shows the person's natural dentures.

#### WHAT DR. WILLIAMS DID

It is worth while to summarize in the fewest possible words what he established. He has conclusively proven that in the finest natural dentures of the square and tapering types the outline form of the upper central incisors is identical with the form of the face in repose and that in the ovoid type there is a close relationship of form.

He has shown also that when artificial teeth are to be selected for edentulous cases the finest effects are achieved by selecting teeth in which the form of the upper central is like the form of the face in repose.

In the studies leading to these discoveries he collected photographs of men and women in all races who had been recognized as exhibiting unusual mental attainments, feeling that these should express well-defined types. When he found his resources in this line limited, he removed to America and we established a photograph gallery and took pictures of hundreds of people under laboratory conditions, in order that we might study at leisure the facial characteristics.





Fig. 20

Figure 20 shows the shadow of an upper central enlarged, inverted and imposed on the face as in several previous illustrations. It will be noted that the shadow of the tooth is not identical in form or proportions with the photograph of the face. The natural dentures are not pleasing because of the unlikeness of face form and tooth form.

We began an intimate study of those natural dentures which were most pleasing, not only at first glance but upon careful analysis, and a comparison of the forms of the upper centrals with the form of the face. And then he did the thing for which my admiration never grows less—he photographed the face in repose, photographed an upper central, enlarged it to the width of the face at the condyles, inverted the photograph of the tooth and imposed it on the photograph of the face with the neck of the tooth at the lower margin of the chin as in Figures 5 to 24 inclusive. Nature's secret was out. The law of harmony was so clearly demonstrated that when once seen it could not be forgotten. The law is that in those natural dentures of the square and tapering types, which are most pleasing, the upper central incisor is of the same form as the face

from the margin of the chin to a point two-thirds way from the root of the nose to the normal hair line. In certain ovoid faces the same exactness appears to not obtain, because of the widening of the face below the condyles, but this may be due to the accumulation of excess adipose tissue as in Figure 22, and not have been intended by Nature. In ovoid faces with little adipose tissue, as in Figure 24, the likeness is nearly as close as in the square type.



Fig. 21

Figure 21 shows a double photograph. Dentures were made with the oval form of tooth designed by Dr. Williams, just as though this lady had lost the natural teeth. These artificial dentures were then photographed into the face in place of the natural dentures. The arrangement of the teeth is exactly the same in both sets of dentures, but the dentures in Figure 21 are more pleasing and the irregularity of the teeth is less noticeable and distressing because the upper centrals are identical in proportions and outline with the face.

The application of the law to the selection of artificial teeth was immediately apparent. In edentulous cases, the dentist need only to select an upper central incisor which, when inverted, exhibits the same outline form as this part of the face in repose.

It is always well to work out so important a theory from more than one view-point. This is very easily done by showing that the farther the

natural teeth depart from the outline form of the face, the less pleasing are the teeth. A fine tapering form of teeth is unpleasant in an oval face as is partly shown in Figures 22, 23, and 24.

#### PRACTICAL ILLUSTRATIONS

If all that has been said in this article is mere theory, or is applicable to the work of only a few artists in the profession, it is unworthy our time and serious thought. But the purpose of these articles is to show that



Fig. 22



Fig. 23



Fig. 24

Figures 22, 23 and 24. These figures show photographs of ovoid faces with shadows of enlarged and inverted natural upper centrals of the ovoid teeth upon them. The harmony of proportions is practically identical with that diagrammed in Figure 11. The harmony of outline form in the tooth with outline form in the face as shown in Figures 23 and 24, is as fine as in the square and tapering types with the exception that the widening of the face below the condyles finds no corresponding widening in the tooth. The general rounding character and bulging surfaces are identical in faces and teeth.

all this applies to every artificial denture made by every dentist everywhere; and that Dr. Williams has so clarified the principles and has accomplished so much of the application that every dentist may master and apply the results. It would be quite a satisfactory description of Dr. Williams' work to say that he had entered the realm where a few men, like himself, worked successfully because of their inherent art gifts, and has brought out the technic and materials in such form that all may use them.

Perhaps the practical application of his work can be seen if one can perceive just how a given patient would appear wearing artificial dentures with harmonious and inharmonious forms of teeth. Figures 25, 26, 27, and 28 show such conditions. The patient presents a typical tapering face, as is shown by the face in repose in each of the illustrations. It is placed there to facilitate comparison of the tooth form with the face form.

## THE DENTIST'S PART

Dr. Williams has isolated the typical forms in natural teeth and the combinations of these forms, which are most useful to the prosthodontist, and has reproduced them in artificial teeth. He has shown the relation of form between faces and natural teeth when the dentures are pleasing. It remains only for the dentist to apply this information by learning to classify faces and select the individual tooth forms. The information for doing this has been published elsewhere in detail.\*

In view of the absolute dependability of beauty in a restoration upon



Fig. 25

Figure 25 (double). This shows artificial dentures made with typical square teeth. This form of teeth is still used by some dentists for all forms of face, without relation to its artistic effect. A little critical study of this illustration shows that the teeth are not as pleasing for this face as those in Figure 28.

the harmony between face form and tooth form it is not too much to say that any dentist who wishes to use the tooth forms which Dr. Williams has provided without mastering the principles of selection, is like unto

\*In the book "Trubyte Teeth for Vulcanite Dentures," The Dentists' Supply Company, New York, U. S. A. and deTrey & Company, London, a copy of which may be had free on request.

him who learned to drive the automobile only in the low gear, in that he will do better in many cases than has heretofore been possible, especially if he confines himself to the use of one or two forms, say the medium square or the fifth tapering.

But it is also not too much to say that he who wishes to do his profession and himself the greatest credit in artificial restorations, who wishes to conceal the loss of the natural teeth by the naturalness of the substitutes, and to put his profession on that plane for which we all so heartily



Fig. 26

Figure 26. The artificial dentures are here made with a modified form of the square type of tooth. The difference between the face form and the tooth form is not so marked as in Figure 25, but they are still unlike, and even one who cannot tell why the teeth are not entirely satisfactory is likely to feel that something should be altered to make them appear natural. This form of tooth is used by many dentists in the far too large proportion of cases.

long, can do so only by recognizing the close relationship of face forms and tooth forms, the necessity for square teeth in square faces, tapering teeth in tapering faces, and ovoid teeth in ovoid faces. He can be sure of relating the proper forms only by mastering and applying correct principles of tooth selection in the construction of all restorations involving the proper use of artificial anterior teeth.

## HESITATION AND DISINCLINATION

While many dentists have welcomed the results of Dr. Williams' investigations, and have unhesitatingly applied the results, some are still held back by that Power of the Past which has been referred to as keeping



Fig. 27

Figure 27. The artificial dentures are here made with the teeth of the typical ovoid form. The curves on the distal sides of the upper centrals and mesial sides of the upper laterals are in marked contrast to the straight cheek lines of the patient, and find no counterpart anywhere in the face. The disharmony does not result from the wide interdental spaces, but from unlikeness in face form and tooth form.

us in our accustomed mental channels or seeking to drag us back to them if we emerge. Such dentists hesitate to use the oval form for oval faces and the tapering forms for tapering faces and the ovoid forms for ovoid faces.

When they are shown that in all cases with well defined face forms they are rightly left no alternative course, that at least in such cases the only tooth form which will produce a fine restoration is determined for them by the face form, and that any departure from that form precludes the character of restoration to which the patient is entitled, they fall back on one or both of two supports: that they like the square forms better, or that the use of the indicated form will leave too large interdental spaces.



Whenever the Power of the Past is so strong over the dentist's mind that he likes better for all cases the square forms to which he has been compelled, by the absence of other forms, to become accustomed, there is no answer save to say that Nature so earnestly desires harmony of face form and tooth form that in spite of all of the conditions that have



Fig. 28

Figure 28 shows the dentures made with teeth of typical tapering form, which is clearly indicated by the straightness of the cheek lines and their rapid convergence downward, as seen in the face in repose. It might be difficult for one not trained in this form of observation to say why these dentures satisfy the eye, but the dentist may know and have the power to achieve such satisfaction in practically every case.

surrounded the development of the race, she has secured at least approximate harmony of face form and tooth form in the great majority of cases, and to recall to him that in every department of his practice, Nature is his teacher and guide.

Those dentists who decline to use the indicated forms because of the wide interdental spaces may do so under a misapprehension as to Nature's plan and use of the interdental spaces. This subject, of no small importance to the prosthodontist, will be discussed next month.

*(To be continued)*



## CONSERVATION OF PLATINUM IN DENTISTRY\*

BY LOUIS J. WEINSTEIN, NEW YORK, N. Y.

DIRECTOR, DEPARTMENT OF APPLIED PHYSICS, METALLURGY AND PROSTHETIC TECHNIQS, COLUMBIA UNIVERSITY, SCHOOL OF DENTISTRY

*Information has been received that the United States Treasury Department has issued instructions to the mints, assay offices and banks, to curtail the sales of gold and silver bullion and allow dental gold manufacturers, jewelry manufacturers and other consumers, only 50 per cent. of the quantities they have been accustomed to purchase heretofore. This new development in the precious metals situation will naturally affect the dental profession very seriously. Further details will be announced in the next instalment.*

In the last article (September) it was stated that it was expected to publish in a later issue a report of the properties and tests of a series of alloys intended as substitutes for platinum in ceramics and other purposes for which the alloys described in the preceding articles are not suitable, and platinum or iridio-platinum is ordinarily employed.

The tests made of the new alloys are of a very thorough and extensive character, in order that there be no question of their value and utility. They require a longer period of time than was anticipated; hence, the publication of the final report was delayed. It is hoped, however, that the same will be ready in time to appear before the end of the year.

Although the alloys described in the preceding instalments and those to follow are available in the manufactured form to those who wish to purchase them, and hardly any practitioner will undertake to make up the alloys for his own requirements during normal conditions, it seems imperative that the compounding of the alloys should receive definite and detailed description, and this will be given in the concluding instalment. This should serve to make the entire subject under discussion more comprehensive, as well as enable those practitioners who may be forced by abnormal conditions, due to the Government's requirement of platinum and other precious metals, to prepare any alloys they may require in the event of an emergency.

The author, although endeavoring in this series of articles to discuss the metallurgy of alloys particularly applicable in the conservation of platinum, feels that the contribution will be more complete and valuable by including a description of the constitution and properties of gold solders and the metals that enter into their composition.

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## GOLD SOLDERS

*(Alloys of gold with metals in Group III)*

In one of the earlier articles of this series (June) the author classified gold and the various other metals which might be employed in alloys, in four groups.\* The elements, zinc, cadmium, tin, and aluminum in Group III are commonly employed in conjunction with other metals, as well as gold which is the base of the comparatively low fusing alloys known as dental gold solders.

Gold solders ordinarily obtainable from the manufacturers and supply houses have been, for a number of years and until comparatively recently, a more or less mysterious and indefinite problem; at least to the great majority of the purchasers and users. There was no law (*nor is there now*) governing the gold content, and any manufacturer could make a solder with any gold content he chose and *stamp any karat he chose on the solder*. Thus, gold solder "for" 18 K. or any other K., while perfectly legal, is deceptive to the uninitiated, and a source of great and continued revenue to unprincipled manufacturers and dealers.

The reputable manufacturers have for years maintained a standard for gold solders by incorporating in the various solders sufficient gold so that the solder would be approximately two karats below the fineness of the gold plate on which it was intended that the solder be used. Other manufacturers, however, put considerably less gold into the solder, selling the product for a few cents per pennyweight less (often more) and thereby profited greatly, cheating the dentist as well as his clientele.

This abuse became very prevalent, though taken cognizance of but rarely. During recent years, the reputable manufacturers found that their business was affected very materially by unprincipled competitors, and began to stamp the actual gold content in thousandths on their product, in order to direct the attention of the profession to the fact that they were putting in a high content of gold. Unfortunately, dentists as a rule are comparatively unobservant; hence, while some good was done, there is still a great deal to be desired in this connection.

After the reputable manufacturers began stamping the actual fineness on the solder, the unscrupulous manufacturers began to camouflage the issue in devious ways. One, for example, advertised very extensively that his 18-Karat solder (for 18K) contained a higher percentage of gold than the corresponding solder made by any other manufacturer. Natur-

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\*See p. 338, DENTAL DIGEST, June, 1918.

ally, practitioners who were attracted by the publicity purchased the alleged high grade product quite extensively.

Now let us see just how this manufacturer (we will call him Blank) "put it over." The facts are as follows: He manufactured three solders, all three for 18K. and stamped accordingly. One did contain a minute percentage of gold above that of any other manufacturer's solder for 18K., another contained considerably less, and the third so much less that the product was positively unfit for use in the mouth.\* He allowed the dealers a liberal margin of profit, especially on the lower grade solders (all marked for 18K.), and when a dentist asked a dealer for Blank's 18-Karat solder, the second or third grade was sometimes furnished. It is particularly significant and deplorable that Blank has not been and is not at this time the only culprit.

It is to be hoped by all those interested in the welfare of dentistry that such practices cease; that manufacturers who are not satisfied with legitimate profits be tabooed by the profession and that satisfactory and equitable standards be adopted for the proper marking of all gold alloys used in dentistry. It is quite evident to anyone who has given the matter thought, that solders marked "for" a certain karat, and intended by the manufacturer to correspond with a certain karat gold, are almost invariably used contrary to the manufacturer's direction. Hence, the indication that a solder is "for" a certain karat of plate is of little value, and aids in the continuation of abuses previously mentioned. The author suggests that the profession demand solders upon which is stamped the *actual percentage of gold and actual karat in legible characters*, and without the questionable term "for."

He also hopes that the term "karat" will be before long entirely eliminated, as it is becoming more and more obsolete, and is losing its value as an indicator of the properties of the gold alloys in connection with which it is employed. The inadequacy of the karat mark as an indicator of the melting point of the gold alloy is particularly apparent when one considers the following:

Eighteen karat gold consisting of 75 per cent. pure gold and 25 per cent. pure silver, melts 6 or 7 degrees F. below pure gold, whereas 18K. gold containing the same percentage of pure gold, but copper and silver

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\*The solders referred to are particularly glaring examples of so-called "easy flowing" solders. The uncombined base metals have a strong affinity for the gold plate with which they come in contact. "Easy flowing" solders are undoubtedly responsible for more of the poor results in soldering operations than all other causes combined. There are, of course, very important contributory factors which are often neglected; namely, investment compounds and fluxes. See author's contribution on refractory materials and fluxes in *Peeso's Crown and Bridge Work*, or *Prothero's Prosthetic Dentistry*.

as the alloying elements (copper predominating), melts below 1700 degrees, and, therefore, more than 250 degrees F. below the 18K. silver alloy gold or the 24K. pure gold. U. S. coin gold 21.6K. fine melts at a lower temperature (1735 degrees F.) than 18K. silver alloy gold or 20K. silver alloy gold. The author's alloy No. 3 contains 66 per cent. gold, and is therefore only 16K. fine but melts at a temperature over 250 degrees F. above 24K. gold; hence it may be soldered safely with 24K. gold or alloys possessing even a higher melting point. A score of other examples may be readily cited to prove the inadequacy of the karat mark as an indicator of the melting point.

Furthermore, the karat can be used no longer as an indicator of hardness as it has become inadequate for that purpose. It was used by the jewelers and adopted in dentistry on the supposition that lowering the karat increased the hardness of gold. While it still applies to some jewelers' alloys, it now does so but to a slight extent in dental alloys. Eighteen karat silver alloy gold is softer than 20 or 22K. copper alloy gold. Eighteen karat palladium alloy gold is almost as soft as pure gold. Alloys as low as 16K. furnished for dental purposes are in many instances softer than 22K. gold, etc.

Gold solders as a rule are composed of gold as the chief element and silver and copper as cheapening agents and "fillers," and one or more of the four metals in group III, all of which reduce the melting point, but not all of which are desirable and suitable constituents. The gold solders from which the author has obtained the most satisfactory practical results are those made by the firm which has for a number of years produced the various special alloys from the formulæ given in the preceding articles.

Their composition is approximately as follows:

**SOLDER for 22K.** Gold .809 fine, app. 19.4K. The alloy consists of silver, copper, zinc, and tin. Melting point 1625 degrees F., 885 degrees C.

**SOLDER for 20K.** Gold .729 fine, app. 17.5K. The alloy consists of silver, copper, zinc, and tin. Melting point 1525 degrees F., 820 degrees C.

**SOLDER for 18K.** Gold .651 fine, app. 15.6K. The alloy consists of silver, copper, zinc, and tin. Melting point 1425 degrees F., 770 degrees C.

It will therefore be seen that the basic constituents of a good gold solder are gold, silver and copper, and zinc and tin, which two latter elements further reduce the melting point in the solders just described. The silver is employed principally as a "filler" and color modifying agent. The copper is employed for the same reasons and also because of the

fact that it reduces the melting point of the gold and hardens it considerably as well. The zinc is employed to still further reduce the melting point, and the tin might be termed an adjunct to zinc, conferring practically similar properties, provided it is not used in excessive quantities.

Aluminum and cadmium are present in most other gold solders which have come under observation. The value of aluminum as a constituent is extremely doubtful, as most of the solders containing that element show up very poorly under every test. Cadmium also reduces the melting point of gold considerably, debases the solder very much and renders it entirely unfit for use in the mouth. Gold solders containing high percentages of cadmium deteriorate and discolor very rapidly in the mouth, and have proven distinctly harmful in many cases.

A great deal of solder containing cadmium has been made and used in Germany, and unfortunately similar solders are quite prevalent in this country. It lowers the melting point of gold very considerably and decolorizes gold comparatively little, thus enabling the production of a solder of very good color, but it makes the gold quite brittle, and aids very materially in the tendency of the solder to burn into the work, which property is characteristic of nearly all so-called "*easy-flowing*" solders.

The term "easy flowing" is unquestionably a misnomer. Such solders melt easily but do not flow readily. They ball up and stick, require a great deal of flux, and if excessive heat is applied in order to induce flow, oxidize and burn into the work with consequences well known but too little understood by the majority.

A normal or even a high fusing solder is far better than a so-called "easy flowing" solder for all dental purposes. The object in formulating the solders described in the following was not so much to improve upon the standard solders previously mentioned as to provide *higher fusing solders* to more nearly conform with the author's alloys, all of which fuse at a higher temperature than ordinary dental golds, such as 22K., 20K., coin gold, etc.

#### FORMULA OF GOLD SOLDER NO. 84, 20.K. FINE

Gold . . . . .	84.0
Silver . . . . .	7.5
Copper . . . . .	5.5
Zinc . . . . .	3.0

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Total . . . . .	100.0
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Melting point 1675 degrees F., 915 degrees C.



## FORMULA OF GOLD SOLDER NO. 76, 18.2K. FINE

Gold . . . . .	76.0
Silver . . . . .	11.5
Copper . . . . .	8.5
Zinc . . . . .	4.0

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Total . . . . . 100.0

Melting point 1550 degrees F., 840 degrees C.

## FORMULA OF GOLD SOLDER NO. 68, 16.3K. FINE

Gold . . . . .	68.0
Silver . . . . .	14.5
Copper . . . . .	12.5
Zinc . . . . .	5.0

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Total . . . . . 100.0

Melting point 1450 degrees F., 785 degrees C.

As will be seen in these formulæ, zinc is the only one of the metals in group III that is employed. It serves admirably for reducing the melting point; it adds strength and hardness, without brittleness, and does not burn out of the alloy as claimed in some text books; furthermore, it serves to partly deoxidize the copper which confers a comparatively dark color and aids also in reducing the melting point. These solders melt at a temperature somewhat higher than the standard solders for 22K., 20K., and 18K., contain a somewhat higher percentage of gold and correspond very closely in color with alloys Nos. 1, 2, B, C, D, etc., described in the preceding articles. They flow readily when the work upon which they are used is brought up to the *proper temperature*, neglect of which precaution almost invariably causes poor results in any dental soldering operation, even if the best solder is employed.

(To be concluded in December)



### OUR COVER

In calling the attention of our readers to the cover design of this month's DIGEST, it will be observed that many pictures of interest have been utilized to form the triangle and bar of the Y. M. C. A. In this issue some of the wonderful activities of the Y. M. C. A. in France where our American boys are stationed are detailed. By referring to the figures in each panel picture in and around the triangle on the cover, the following descriptions will be readily understood:

1.—The place that is like a home for the American soldiers in France. A Y. M. C. A. building, where books, pictures, concerts, games, boxing and other diversions are found.

2.—Exterior of Y. M. C. A. Red Triangle Hut at — France. (Courtesy of Committee on Public Information.)

3.—A Canadian Y. M. C. A. near the front. (Courtesy of Canadian War Records.)

4.—A Y. M. C. A. Hut in a wheatfield. As soon as the wheat is threshed, the whole field is to be made into athletic grounds for army sports. The battle line in the west is not far away.

5.—The opening of a Y. M. C. A. Hut. (Courtesy of Committee on Public Information.)

6.—Camouflage for Association Hut in France.

7.—Y. M. C. A. Tent near — France. (Courtesy of Committee on Public Information.)

8.—On the British Western Front. A Y. M. C. A. Hut under shell fire.

9.—A typical Y. M. C. A. Hut near American Headquarters in France.

10.—Foyer du Soldat, equivalent of Army Y. M. C. A. Hut for French Army.

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### OUR TOOTH BRUSH AND TOOTH PASTE REPORT

We are convinced that the Tooth Brush and Tooth Paste Fund was worth while and our only regret is that it did not receive more generous support from our readers, because the comparatively small supply only partially met the need.

The dental profession is doing a great deal toward helping to win the war, by caring for the teeth of our soldiers. Is it too much to ask that they help to insure the permanency of their work by supplying a portion of the tooth brushes and paste which are needed?

**OXIDE OF ZINC AND OIL OF CLOVES**

By E. S. ULSAVER, D.D.S., NEW ROCHELLE, N. Y.

It is not likely to be too frequently repeated that a temporary filling of oxide of zinc and oil of cloves, placed over softened dentine in a vital tooth will so dry out the dentine that it can be excavated with comfort to the patient. Such fillings may often remain in place for three months, and will then require a bur or sharp excavator to remove them. The influence of the filling is to reduce the inflammation of the pulp and the sensitiveness of the dentine.

Three months ago an adult case presented in which it seemed probable that the pulp must be removed from two vital teeth. There was no exposure, but the dentine over the area of the pulp was much softened. A temporary filling of oil of cloves and oxide of zinc was placed in each tooth and the patient dismissed. The patient recently returned to the office with the pulps vital and the teeth in fine condition. The temporary fillings have been removed, the dentine excavated without causing pain and the teeth filled.

The oxide of zinc and oil of cloves should be mixed to a very thick paste so that when it is patted with a spatula, moisture can just be seen. It should be patted to place in the cavity, and saliva immediately permitted to flow over it.

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**NO GOLDEN SHORE**

Give me not scenes more charming; give me eyes  
To see the beauty that around me lies;  
To read the trail of souls, see angels shy  
Among the faces of the passersby.  
I do not ask for sweeter music than  
The common, daily Symphony of Man,  
Could I but grasp its counterpoint, and see  
How each discord melts toward harmony.

I do not ask for more to seek and love me,  
I do not ask for brighter eyes to move me,  
But sharper sense, to miss no hailing sign  
Of fellowship in spirit seeking mine.  
No golden shore I seek, but a heart that sings  
The exquisite delight of common things.  
The Kingdom of Heaven is not There, but Here—  
O for the seeing eye and hearing ear!

### Y. M. C. A. ACTIVITIES

Because athletics and physical relaxation play a leading part in keeping the soldier in the best physical trim as well as strengthening his mental poise, the work of the Physical Education Department of the Y. M. C. A. War Work Council along this line has been of immense value in helping to round out and maintain a strong, aggressive military force. American and French military commanders have been unsparing in their words of praise of the Y. M. C. A. physical directors' assistance in maintaining the morale of their armies. One of the highest tributes paid the organization was the official request of the French Army for the Y. M. C. A. to furnish physical directors to conduct in that great fighting force the same work which had been shown to be so beneficial to the American Expeditionary Force.

To persons of sedentary life it might appear that the daily life of a soldier in war contains athletics enough, marching long stretches, drilling with weapons, digging trenches and clearing fields. These are not athletics, but hard work. Athletics connotes physical exercises taken up more or less voluntarily for pleasure or beneficial results. The soldiers have setting-up exercises, a vigorous daily drill for developing muscles, correcting physical defects and giving them the military carriage, but it is not recorded that the recruits voluntarily turn to these for relaxation in their hours of leisure.

The formal athletic program of a military unit is supervised by the army athletic officer, working with this military officer, who cannot give personal attention to the many men under his direction except in regimental drills, are the Y. M. C. A. physical directors and—in the cantonments—the representatives of the Commission on Training Camp Activities.

### BASEBALLS BY THE THOUSANDS

To help supply the sports needs of the American Expeditionary Forces the Y. M. C. A. has placed orders for athletic goods in larger quantities than have ever before been purchased at one time. Any athlete's eyes will bulge at these figures of equipment for overseas use: 132,000 baseballs, 24,000 bats, 1,500 masks (baseball, not gas), 2,500 catchers' mitts, 15,000 fielders' mitts, 21,000 indoor baseballs, 6,000 Rugby footballs, 8,000 soccer footballs, 21,000 ping-pong balls (don't laugh: ping-pong is quite the rage for indoor sports "over there"), and 700 sets of boxing-gloves.



Y. M. C. A. secretaries who have carried their supplies five miles through communication trenches to distribute them at the front. Five minutes after this picture was taken they were driven under cover by falling shells

#### SOLDIERS GREAT CHOCOLATE EATERS

How much chocolate do the American troops eat a month? 920,000 pounds. This item alone means an expenditure of well in excess of a million francs a month. The 528,000 tons of crackers or biscuits consumed monthly are worth almost as much as the chocolate.

Although the appetite of the American soldier and sailor in France for sweets is seemingly insatiable, his demand for tobacco is even more amazing. The Army authorities have asked the Y. M. C. A. to help supply this need through the post exchanges. In a single order recently the Association bought 1,337 tons of tobacco of all kinds. At one time there was a single shipment of 900,000 cigars on the seas. Chewing tobacco is purchased by the half-dozen carloads.

This enterprise is not a money-making one. Difficult and costly as it is to maintain a business of such a size under actual war conditions and in the trench areas as well as behind the lines, the prices that prevail in the post exchanges are now approximately the same as the retail prices in effect in this country. These prices are maintained in spite of the high shipping charges, the loss of supplies from sinkings and the high cost of land transportation, whether by railroad or motor truck, in France.

#### SMOKES BY THE MILLIONS

A recent careful and expert estimate made in Paris indicates that if it were possible to obtain them, 4,500,000 cigars, 200,000,000 cigarettes and an indeterminate quantity of chewing tobacco would be needed to meet the actual demand per month made in the field on the post exchanges. A further indication of the "smoke barrage" sent up monthly by the members of the American Expeditionary Forces is the fact that at the present time three million boxes of matches are sold every thirty days over the counters of the exchanges. Sweets and tobacco—these are the new items that bulk largest in the post exchange, but this institution also handles some scores of other items. Soap, safety razors, blades, shoestrings, chewing gum, candles, various kinds of brushes, shoe-blackening, canned jam, jelly, sardines and the like—all the little extras that a man likes may be had at the exchange.

#### SUPPLIES OFTEN GIVEN TO MEN

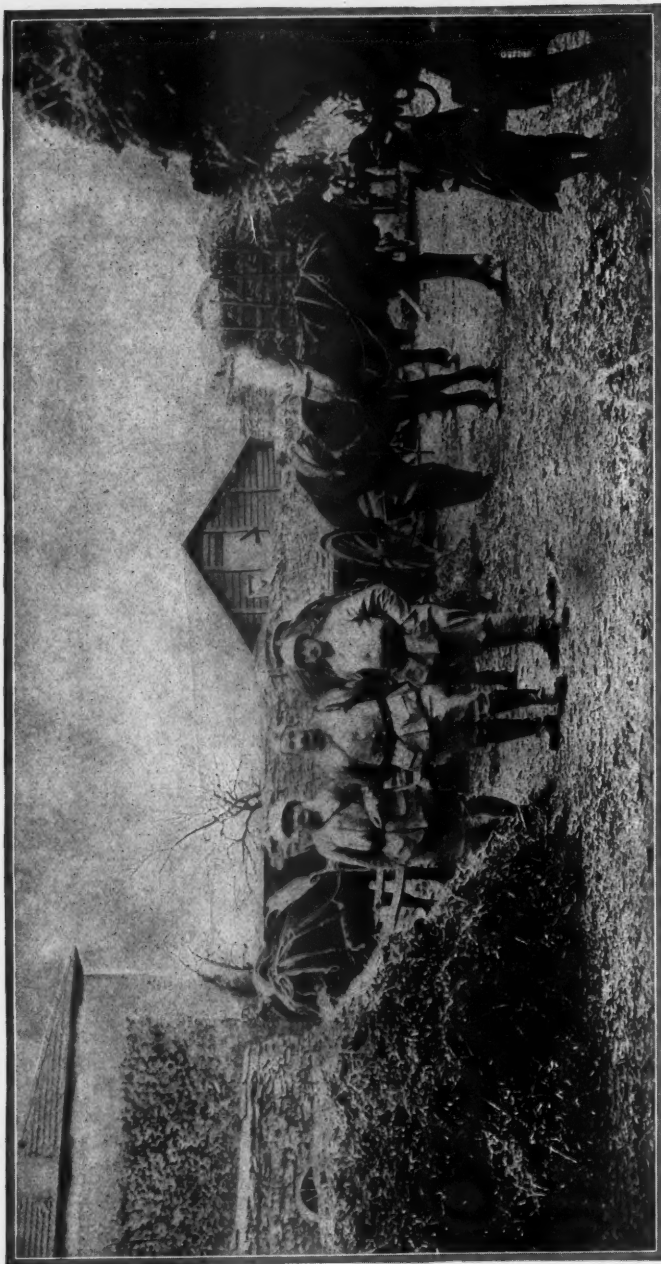
Moreover, large quantities of post exchange supplies are given away to the men in times of emergency. For example, during the course of the present great battle, the American Y. M. C. A. has given away great amounts of hot and cold drinks, tobacco and similar things. At the meeting of the National War Work Council of the Y. M. C. A. held in New York, June 3rd, the policy of the field workers of giving supplies free to the men in the trenches and under certain other conditions of great stress, was unanimously approved by the almost two hundred members present.



In addition, the Council declared: "We confirm the action of the Executive Committee in assuming at the request of General Pershing as stated in general order No. 33, the responsibility for the organization and conduct of the post exchanges of the American Expeditionary Forces.



Y. M. C. A. worker distributing cigarettes to wounded in front of regimental dressing station. The worker, Alfred Stokes (with pack), cited for bravery for holding this post under severe bombardment, helping wounded



Y. M. C. A. hut at ———

And we commend the policy of the Executive Committee, while seeking to conduct this agency on a self-supporting basis, of not conducting it as a source of revenue with which to meet the expenses of other activities of the Council. We authorize the Executive Committee to make appropriations for the post exchange to the maximum of twenty million dollars."

#### TROOPS OMNIVOROUS READERS

The American soldier and sailor in France is an omnivorous reader. As a "Y" secretary put it, "If our civilization may be judged by the numbers of books and magazines and other literature read by our boys in the rather primitive camp life in France, there is nothing to fear from the Army or Navy in the way of national intellectual atrophy."

In three months recently 386,000 pieces of reading matter and sheet music were shipped from the Paris Y. M. C. A. warehouse to the field. Of this material, almost 31,000 pieces were books of a general nature. A reserve of about 40,000 volumes of general reading matter is maintained at Paris and is shipped to the field as expeditiously as transportation facilities will permit.

And those favorite magazines of yours that you put a one-cent stamp on and drop, unaddressed, in the mail box. In those same recent three months 128,000 of them went into Y. M. C. A. huts in France to help the boys pass their leisure time.

The list of prominent folk who have gone on tour for the Y. M. C. A. to speak or recite to the men in the huts reads like an American Who's Who. Stage celebrities and favorite authors have stopped at no hardships or privations to carry a bit of cheer to the men up and down the lines in France. It has meant much to the American Expeditionary Forces to hear and see in person E. H. Sothern, Winthrop Ames, Margaret Deland, Irvin S. Cobb, George Randolph Chester, Reginald Wright Kauffman, Vance Thompson, Sir Arthur Priestly, John Craig, Hugues Le Roux and William T. Ellis.

#### HUTS

The word "Hut" requires considerable use of the imagination. It may be a cellar in a hillside, a dark chamber in a huge cave or chalk quarry, a tent in some little camp in a forest, a thoroughly equipped hotel in a city, a large public building, or even a Middle Age château. Wherever it is, it is the leisure time centre for the men for practically everything. Library, writing room, theatre, social hall, moving picture show, "home," club, game room, church—the "hut" fills a multitude of needs and plays a multiplicity of rôles. In addition to the six hundred serving the



"Y" men with packs of eats and smokes, making rounds of first line trenches

American forces in France, there are some five hundred and fifty Y. M. C. A.'s called *Foyers du Soldat* for the French Army.

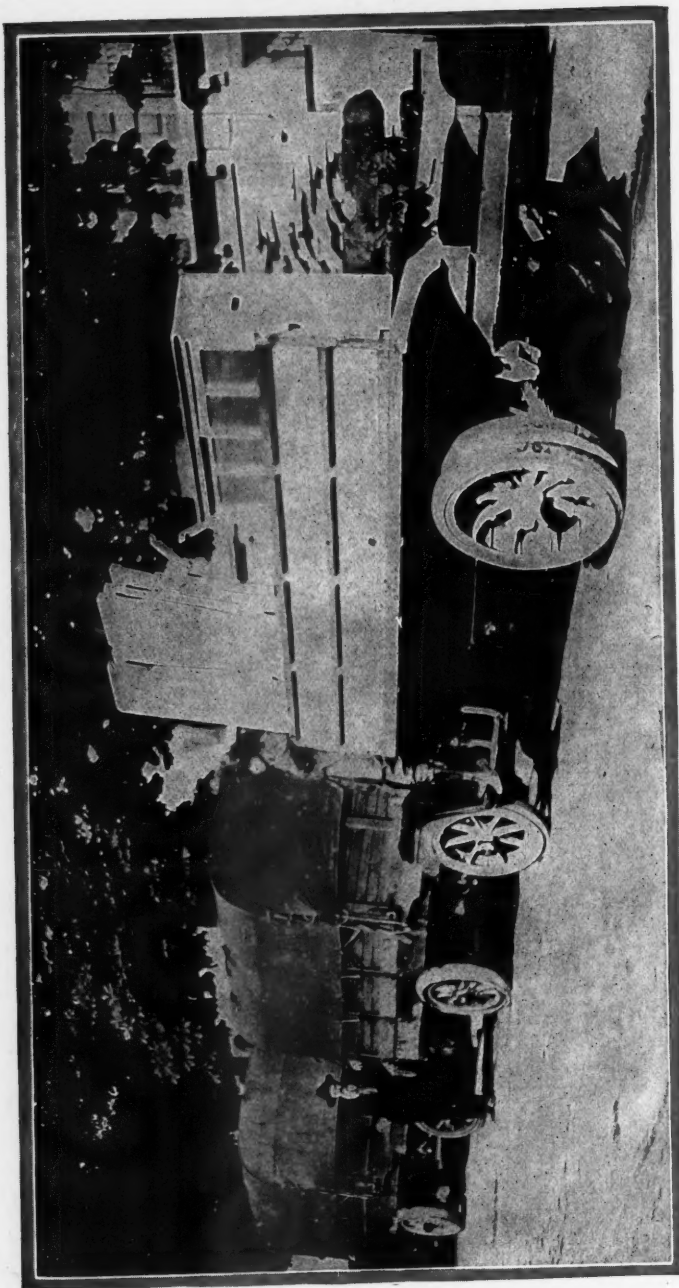
While the hut may be any shelter that is handy and the use of which can be begged, borrowed or bought, by far the largest number of huts in France are ones built by the Association according to plans and specifications designed by Y. M. C. A. architects. There are two types of such buildings. The so-called type A hut is a single structure, 144 x 30 feet. The cost of erecting it, including the necessary tables and benches, is about 60,000 francs.

Type B is a double building, representing an outlay of 90,000 francs. This type of hut measures 150 x 90 feet. Both the type A and B huts are wooden structures.

In addition to the two huts developed by the Y. M. C. A. to fit its own peculiar uses, the Association in many instances utilizes "Adrian barracks," a type of building long familiar in the war zone and adaptable to many uses. This structure, also built of wood, costs about 20,000 francs.



Khaki College. A class in the study of the combustion engine in England. The educational work is financed by the Y. M. C. A.



The first American Army Y. M. C. A. truck to go to the front



## TRANSPORTATION PROBLEMS MANY

The Y. M. C. A. work extends over so much of France and has assumed such proportions that a large and efficient transportation system is requisite. The French railways are naturally taxed to the limit of their capacity by military exigencies. The Y. M. C. A. can therefore depend only partly upon them for transportation. In order to be sure that the far-flung huts are regularly supplied with the various necessities, the Y. M. C. A. maintains a fleet of about two hundred trucks and automobiles. Their aggregate value is close to \$300,000. An hour's travel on any road in France is rare without encountering one of these camions laden with pianos, phonographs, books, post exchange supplies, stereopticons, and so on, stubbornly digging their way through mud or dust that the huts may not for even a day be lacking in any of their requisites.

## NOTES ON WOMEN'S DIVISION OF THE Y. M. C. A.

1. We have need of women both for Overseas and Home Camps; in the Home Camps all Y. M. C. A. canteen workers are volunteers; for Overseas work they are on an expense salary which is computed according to the price of living, and is meant to cover only the normal expenses of workers.
2. The requirements for entering either Home Camps or Overseas Service are very rigid. A strict physical examination is obligatory; applicants should show at least a high school record, and all special training, though not obligatory, is useful; and the age limit is between the ages of 25 and 45. But apart from these technical requirements, applicants are chosen for their qualities, earnestness of purpose, unselfish desire for service, adaptability, ingenuity, reliability, attractive and cheerful disposition, high and earnest principles.
3. There are local committees in all the large cities, where candidates may present themselves, for no applicant is accepted without a personal interview. The large recruiting centres for women workers are New York; San Antonio, Texas; Boston; Chicago; Atlanta; Buffalo; Philadelphia; Pittsburgh; San Francisco; Washington; Richmond. Mrs. F. Louis Slade is head of the Women's Division for Overseas work, with Headquarters at 2 West 43rd Street, and Mrs. Willard T. Straight, head of the National Home Camps Committee.
4. In the Home Camps the women are in the Y. M. C. A. huts, giving out writing paper, keeping the libraries, talking to the men, and giving by their presence a touch of home. Overseas they are with the army in all the camps of France; the lonely lumber camps, the congested port

towns, the leave areas, the large cities, the isolated camps, and wherever the American E. F. has installed itself. The value of women in American camps cannot be over-estimated; they supply a connecting link with home, they represent the mothers, wives, sisters and friends at home; they cheer, comfort and inspire by their cheerful, friendly presence. Wherever there is an American contingent in France, there one finds the triangle, and wherever one sees the triangle now-a-days, the men expect to find American women. We do not strive for one or two types of women, we want large-hearted, broad-minded, unselfish women, whose desire for sincere service is their infallible guide through every experience, women who forget themselves in the larger opportunity to serve.

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### THE TELEPHONE IN SURGERY

The telephone is being put to many and strange uses these days, especially in connection with the war. Among them perhaps none is stranger than its use in surgery. The army surgeon now finds that by connecting one terminal of a telephone with a moistened electrode applied to the patient's skin and the other terminal to a metallic probe it is possible to discover a bullet located in the man's body. Directly the probe touches the bullet imbedded in the tissue a grating sound is heard in the telephone receiver. This method not only reduces the time of search but prevents serious disturbance of the patient's tissues.

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### NOTHING TO DO BUT WORK

Thou shalt work! This is the word that thunders out of the universe. It is no foolish exclamation from the mouth of Enigma. It is the mandate of the power that made the world and "swings Arcturus on the north." And all must obey, from the coral insects that build in the sea up to the seven spirits that burn before the throne.

So man is the conscript of an endless adventure. Childish and foolish are we if we look forward to some final pay day, to some grand discharge from duty, to some eternal festival of the universe.

Let us make haste to learn that the reward of work is not idleness, but power—power to do more work. Blessed is the moment when a man has found his place in the toil of the world. For the first time he begins to keep step with the music of the stars. Work is more than a blind necessity—more than a brute means for getting food and shelter. It also is a discipline, a revelation, a sacrament.

# DENTAL LAWS

## 1918 DENTAL LICENSE REQUIREMENTS IN THE UNITED STATES OF AMERICA

Revised September 30, 1918

BY ALPHONSO IRWIN, D.D.S., CAMDEN, N. J.

### ROSTER OF WINTER EXAMINATIONS. UNIVERSAL REQUIREMENTS

1. All applicants for a dental license must undergo an examination.
2. All examinations and writings must be in the English language.
3. The applicant must have reached the age of 21 years or over.
4. Possess a good moral character, certified to by two or more licensed ethical dentists, who must be well acquainted with the applicant; under reciprocity the endorsement of two resident freeholders is required.
5. New laws require a four years' course accredited High School education, or its equivalent.
6. All Boards require a Dental Degree from a reputable College, countersigned by the Secretary, Registrar, Dean or Provost.
7. The candidate must present a properly filled out and attested application, accompanied by
8. A recent unmounted cabinet-sized photograph, countersigned by himself, and attested to by the photographer, or by the Dean or Secretary of the College.
9. Credentials must be presented to the Secretary of the Board at least one or two weeks prior to the examinations, including all licenses, if any, in possession of the candidate.
10. The license fee (ranging from \$10.00 to \$50.00) to be paid by certified check or post-office money-order or cash.

If credentials are accepted, the candidate must present himself at the proper time and place to undergo a practical and theoretical examination before the Board of Examiners upon subjects and tests usually taught in a standard dental college.

*Alabama:* New law, 1915. Preliminary education, four-year High School diploma or its equivalent, fourteen standard units, dental degree from a reputable dental college. Examination fee \$20.00, certificate \$5.00. All applicants examined. Practical requirements: Amalgam, gold and silicate fillings; gold inlay; four-tooth-bridge. Meeting, second

week of June, in Tuscaloosa or Birmingham, each year. Interchange with Illinois, Kentucky, and Louisiana. Initial Registration with Probate Court in County where practice is conducted, and annual registration Oct. 1st with Board Secretary; fee, \$1.00. *Secretary*, A. H. PARKS, 412-414 First National Bank Bldg., Montgomery, Ala.

*Arizona*: New law, 1913. *Non-graduates not admitted* to examinations, unless they hold a license from another state. All candidates examined, and *dental degree required*. License fee \$25.00. October meeting in Phoenix, June in Bisbee. No interchange. Registration with Secretary of State. *Secretary*, EUGENE MCGUIRE, 202-203 Noll Bldg., Phoenix, Arizona.

*Arkansas*: New law, 1915. *Dental diploma required*. All applicants examined. License fee, \$15.00. Under reciprocity \$25.00. November meeting in Little Rock. Practical requirements: 1 Gold and 1 Alloy filling; 1 inlay, 1 Gold and 1 Porcelain crown. Plate to Packing stage. Interchange with Illinois, Kansas, Missouri, and Oklahoma. Annual registration with Board Secretary; fee \$1.00. No winter meeting this year. *Secretary*, I. M. STERNBERG, Fort Smith, Arkansas.

*California*: Amended law, 1915. Accredited High School diploma or State Superintendent's certificate, and dental degree required. No interchange. License fee \$25.00. Practical requirements: Gold and Amalgam fillings; gold soldered or porcelain faced crown. May or June, and December, examinations held in San Francisco and Los Angeles. Registration with County Clerk. Annual license fee \$2.00. *Secretary*, C. A. HERRICK 133 Geary Street, San Francisco, Cal.

*Colorado*: Law amended, 1905. Recognized High School Certificate and Dental Degree required. All applicants examined; examinations, practical and theoretical, held during June and December in Denver. Practical requirements: Gold and amalgam fillings; Richmond crown; Plate with anatomical occlusion. License fee \$25.00. No interchange. *Secretary*, R. C. QUICK, 310 Metropolitan Bldg., Denver, Colorado.

*Connecticut*: New law, 1915. Dental degree required. "Lawful practitioners of three years' standing examined." Law permits interchange, but none reported. Practical requirements: Gold crown; setting up full upper to lower set of teeth; Gold, Alloy, Cement, Guttapercha fillings; root-canal treatment. June and December examinations in Hartford. License fee \$25.00. Dental Hygienists licensed; fee \$5.00.

Registration biennial with Recorder; fee \$1.00. *Recorder*, EDWARD EBERLE, 902 Main St., Hartford, Conn.

*Delaware*: Law, 1917. Requirements: Written notice of application for examination two weeks prior to meeting, accompanied by \$25.00. Requirements: Insertion of one gold and plastic filling before the examiner, the candidate furnishing everything except an engine; "Also showing Richmond Crown, three or four tooth bridge, partial upper Rubber Plate," the product of his own work; and diploma from a recognized Dental College, and a late attested photograph of the candidate. Re-examinations granted on same conditions as for a new candidate, including fees. Board meets first week of January (14th and 15th in 1919), and July; time and place announced. Registration with County Clerk (initial) and annual registration with Board Secretary; fee \$1.00. *Secretary-Treasurer*, W. S. P. COOMBS, Middletown, Del.

*District of Columbia*: Last Act 1904. Dental degree required. January and June examinations in Washington University. Fee \$10.00. Interchange with Iowa, Kansas, Minnesota, Ohio, Oklahoma, West Virginia. Dental Hygienists examined and licensed; fee \$10.00. Apply to Secretary for Blanks. *Secretary*, C. A. HAWLEY, 1624 I Street, N. W., Washington, D. C.

*Florida*: Law of 1911. Dental degree required. January and June examinations in Jacksonville. Examinations held in Jacksonville. No interchange. License fee \$25.00. *Secretary*, R. P. TAYLOR, St. James Bldg., Jacksonville, Florida.

*Georgia*: Law approved 1909. Dental degree required. Examinations usually held during January and May or June in either Atlanta or Brunswick. Practical requirements: Gold filling; Plate with anatomical occlusion; carving teeth. No interchange. Temporary licenses issued, fee \$5.00. Regular license \$10.00. Registration with Board of Dental Examiners and County Clerk. *Secretary*, D. D. ATKINSON, Brunswick, Georgia.

*Idaho*: 1909, Amended law; original Act approved February 16, 1899. Examinations required with or without diploma; five years' practice accepted. January and July examinations held in Boise. Licenses exchanged with Utah. License fee \$25.00. *Secretary*, A. M. JACOBSON, 255 E. Centre St., Pocatello, Idaho.

*Illinois*: The Illinois requirements are typical, and with few altera-

tions could apply to nearly all State Dental examinations. Amended law 1915, in force July 1, 1916. Diploma from an accredited High School (four years' course) or its equivalent; fifteen units; dental degree required. Theoretical examinations in anæsthesia, anatomy, bacteriology, chemistry, embryology, histology, materia medica, metallurgy, operative dentistry, oral surgery, oral hygiene, pathology, orthodontia, physiology, prosthetic dentistry, therapeutics, in their relation to dentistry.

Practical examinations consist of 1 gold filling; 1 gold inlay; 1 crown. The Board may substitute an additional gold filling or inlay. Applicant must furnish all instruments and materials.

Prosthetic work, plaster casts, also impressions of full upper and lower denture; also bite, occlusion mounted or anatomical articulator and trial plate ready for the mouth; construction of lower molar gold crown is required; the Board may substitute other work.

Biennial registration, fee \$1.00. June and November examinations in Chicago.

Points in Grading: Prosthetic—First, Treatment of the impression to secure retention; Second, Selection and general arrangement of the teeth. Occlusion—Third, Contour or restoration of the features.

Crown Grading: First, preparation of the tooth; Second, Adaptation of band to root; Third, Occlusion form; Fourth, Finish.

Examination fee \$20.00. Examination in Room 217, County Building, Chicago; practical work, 31 W. Lake St., Dental School, Northwestern University. License \$5.00. Registration \$1.00. "Interchange upon certain conditions."

Reciprocity with Alabama, Arkansas, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Missouri, Michigan, Nebraska, Ohio, Vermont, Wisconsin. *Secretary*, F. C. DODD, State House, Springfield, Illinois.

*Indiana*: Law amended 1917. Preliminaries: State Superintendent's certificate or College entrance credentials (16 units); diploma from a recognized dental college. All applicants examined. June and November examinations in Indianapolis. Practical requirements: Gold foil and Alloy fillings; Richmond and Gold-shell crown; Plate; Full (28 teeth), ready to invest. License fee \$20.00. Reciprocity with Illinois, Iowa, Kansas, Kentucky, Michigan, Minnesota, Nebraska, Oklahoma, Pennsylvania, and Vermont, upon the following terms:

"Any applicant who has been in legal and ethical practice in any of the above states for not less than five years, and who is a member of the State Dental Society, and has the recommendation of the Board and Dental Society of his state, may be admitted to our examination at any



regular meeting and excused from all theoretic examination, being required to pass the practical tests only." Annual Registration with Board Secretary; fee \$1.00. *Secretary*, H. C. MCKITTRICK, 605 Hume Mansur Bldg., Indianapolis, Indiana.

*Iowa*: Law amended, 1904. Graduation from a High School, four years' course, or equivalent; graduation from an accredited Dental College. June and December examinations held in Des Moines or Iowa City. Reciprocity with District of Columbia, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, Tennessee, Vermont, and Wisconsin. License fee \$20.00. Reciprocity \$25.00. Practical work consists of gold filling, amalgam filling, inlay, a crown, setting up full upper and lower denture to point of flasking. Registration with the Secretary of the Board and the County Clerk. *Secretary*, J. A. WEST, 417 Utica Bldg., Des Moines, Iowa.

*Kansas*: Law amended, 1909. Requirements: High School certificate (N. A. D. E. Standard), dental degree. June and November examinations usually held in Topeka or Kansas City, according to announcement. Theoretical subjects: Anatomy, Histology, Prosthesis, Oral Surgery, Materia Medica, Chemistry, Metallurgy, Orthodontia, Physiology, Oral Hygiene, Operative Dentistry, Bacteriology, Anæsthesia, Therapeutics. Practical examinations consist of gold, amalgam and cement fillings, inlays, pulp canal technique, and a plate. (Definite announcements made prior to examinations.) License fee \$25.00. Undergraduates examined, but no license issued until after candidate receives his diploma. Reciprocity with Arkansas, Illinois, Iowa, Michigan, Minnesota, Ohio, Oklahoma, Tennessee, Wisconsin. *Secretary-Treasurer*, F. O. HETRICK, Ottawa, Kansas.

*Kentucky*: Amendments enacted March, 1912. College entrance credentials, fifteen units for preliminaries; graduation from a dental college. Examinations, first Tuesday in June and December, in Louisville. Reciprocity with Alabama, Illinois, Indiana, Kansas, Missouri, Tennessee, Vermont. License fee \$20.00. Registration with State Board of Dental Examiners and County Clerk; annual license renewal before December 31st each year with Secretary of Board; fee \$1.00. *Secretary*, J. H. BALDWIN, 640 Atherton Bldg., Louisville, Kentucky.

*Louisiana*: Amended law, 1908. College entrance requirements for preliminaries; dental degree from an "accepted" dental college. Annual examinations, probably June in New Orleans, license fee \$25.00. Practical Requirements: Gold synthetic and amalgam fillings; upper

and lower denture. Reciprocity with Alabama, Illinois, Mississippi, Ohio, Wisconsin. Registration with Secretary of Board of Health, fee \$1.00, and Parish Clerk of Court. *Secretary*, V. K. IRION, 935 Maison Blanche Bldg., New Orleans, Louisiana.

*Maine*: Amended law approved April 1, 1915. Dental degree required. Examinations held in State House, Augusta, probably in June and September. Law permits interchange; none reported. Fee \$20.00; for third examinations \$10.00. *Secretary*, WILL S. PAYSON, Castine, Maine.

*Maryland*: Amended law, 1896. Dental degree required. May and November examinations each year in Baltimore. "Theoretical examinations in Anatomy, Physiology, Chemistry, Bacteriology, Oral Surgery, Operative and Prosthetic Dentistry, Pathology, Therapeutics, and Materia Medica." Practical requirements: "Insertion of one gold and one amalgam filling in the mouth and the soldering of Bridge of not less than four crowns, two of which shall be porcelain, the parts being assembled and invested in advance and soldered in the presence of the Board." May interchange: 10 years' practice required. License fee \$10.00. *Secretary-Treasurer*, F. F. DREW, 701 N. Howard St., Baltimore, Md.

*Massachusetts*: Law approved May 31, 1915. Dental diploma required. June and December examinations in State House, Boston. Board chooses subjects of practical examinations prior to each examination. Law permits interchange; no agreements so far. License fee \$20.00. Dental hygienists examined and licensed, fee \$10.00. *Secretary-Treasurer*, GEO. H. PAYNE, 29 Commonwealth Avenue, Boston, Mass.

*Michigan*: Law amended 1917. High School diploma of fifteen units; dental degree required. June and November (18-23) examinations held in Ann Arbor. License fee \$20.00. Interchange with Illinois, Indiana, Kansas, Minnesota, Nebraska, Ohio. *Secretary-Treasurer*, B. S. SUTHERLAND, Owosso, Michigan.

*Minnesota*: Law amended 1911. Dental degree required. Examinations, second Tuesday after first Monday, March, November, (June) in State University at Minneapolis. Practical requirements: Gold foil and amalgam fillings; gold inlay; crown (any type). "No" non-graduates examined. Reciprocity with District of Columbia, Illinois, Indiana, Iowa, Kansas, Michigan, Nebraska, Ohio, and Wisconsin. Reci-

procuity fee \$50.00. Regular license fee \$20.00. Examinations at University of Minnesota. Annual registration with Secretary, May first, fee \$1.00. Address *Secretary-Treasurer*, C. W. BENSON, 323 New Jersey Building, Duluth, Minnesota.

*Mississippi*: Amended law, 1912. Temporary license issued. Fee \$10.00. High School Certificate and dental degree required. Examinations held third Tuesday in June, annually, in Jackson. Regular license fee \$10.00. Examination in Jackson. Address, *Secretary-Treasurer*, B. J. MARSHALL, Marks, Mississippi.

*Missouri*: Law approved April 10, 1917. "Fifteen units of credit" and "certificate in another state or dental diploma required." Examinations, second Monday in June and October, in Jefferson City. Practical requirements: Gold and Amalgam fillings; Richmond Crown, Plate with anatomical occlusion. Fee \$25.00; re-examination \$10.00. Certificate license \$1.00. Reciprocity with Arkansas, Illinois, Indiana, Iowa, Kentucky, Nebraska, Oklahoma and Vermont. Annual renewal of license with Secretary of Board prior to November 30th each year. Address *Secretary-Treasurer*, V. R. McCUE, Cameron, Missouri.

*Montana*: Law amended 1909. Five years' practice or dental diploma required. No interchange; law permits it: fee \$50.00. Examinations second Monday in January and July, in Helena. License fee \$25.00. *Secretary-Treasurer*, G. A. CHEVIGNY, 107 Clark Building, Butte, Montana.

*Nebraska*: Law approved 1905. High School Certificate or fourteen Carnegie Units. Five years' apprenticeship or dental degree. June and November examination in Lincoln and Omaha. License fee \$20.00. Practical requirements: one gold and amalgam filling, gold inlay, one crown, full upper and lower set of teeth ready for vulcanizing. Interchange with District of Columbia, Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Ohio, Oklahoma, Tennessee, Vermont. Annual registration with Secretary January 1st, fee \$1.00. *Secretary-Treasurer*, S. A. ALLEN, Loup City, Nebraska.

*Nevada*: Law approved 1905. High School and Dental diplomas required. June and December examinations in Reno or Carson City. No interchange, but law permits it; five (5) years' licensed practice in another state, or apprenticeship for four (4) years admits to examinations (clinical and prosthetic). Annual Registration with Board on January 1st. Address *Secretary-Treasurer*, WM. H. CAVELL, Carson City, Nevada.

*New Hampshire:* Law approved May 19, 1913. High School and dental diplomas. June and December examinations in Manchester. Written examinations in anatomy and oral surgery, physiology, chemistry and metallurgy, materia medica and anæsthetics, operative and prosthetic dentistry, pathology and therapeutics, histology and bacteriology. Practical examinations consist of gold and amalgam and synthetic fillings, inlay preparation (optional), soldering four-tooth bridge, one abutment being a Richmond crown; articulating either a full upper or lower set of artificial teeth. Fee \$20.00. Certificate \$5.00. Dental nurse legalized, fee \$5.00. Interchange with Massachusetts and Vermont. "No formal agreement with any State." Examination about the last week in June, in Manchester. Practical requirements: Gold, amalgam and synthetic fillings; gold inlay; soldering 4 tooth bridge, 1 abutment Richmond Crown. Registration with the Secretary of State and Secretary of State Board of Dental Examiners. *Secretary*, H. L. WATSON, 913 Elm Street, Manchester, N. H.

*New Jersey:* Amended law, 1916. Approved four years' High School diploma or equivalent and certificate of State Supervisor of Public Instruction; also dental degree required. Interchange with Michigan, Vermont, and West Virginia. June and December examinations in Trenton. "Radiography to be added in June, 1919." License fee \$25.00. Re-examination \$10.00. Written examinations upon subjects usually taught in a standard dental college. Practical test: Approximal gold filling with approximating tooth in position, compound approximal filling of amalgam, a silicate filling, test in oral prophylaxis, preparation of a cavity for an inlay, with wax pattern of same. Prosthetic tests: Soldering bridge three or more teeth, exclusive of abutments, and one Richmond crown which may be one of the abutments; material used, gold or silver. Impressions, dies and articulating models must be submitted. Wax bite, anatomical articulation of a full upper and lower denture (plain teeth) imbedded in wax on trial plate, must be submitted. Annual registration with the Secretary of the Board; fee \$2.00. *Secretary*, J. G. FORSYTH, 430 E. State Street, Trenton, N. J.

*New Mexico:* Law amended March 21, 1907. Diploma from a dental college. No interchange. June examinations in Santa Fe or Albuquerque. License fee \$25.00; certificate \$10.00. Practical requirements: gold, amalgam and cement fillings, gold inlay, crown and bridge work, plate to point of flasking. Examination in Albuquerque. Annual registration with Secretary, fee \$3.00. *Secretary*, A. J. MORAN, Deming, New Mexico.

*New York:* Law amended September 1, 1916. Four years' registered High School or equivalent, 72 Regents' Counts, and dental diplomas required. After January 1, 1921, a diploma from a four years' course registered dental college will be necessary. January, September or October, and June examinations, in New York, Albany, and Buffalo. License fee, \$25.00. Theoretical examinations in Anatomy, Chemistry, Metallurgy, Operative and Prosthetic dentistry, Therapeutics, and Materia Medica, Physiology and Hygiene, Oral Surgery, Pathology, Histology, Practical requirements: Gold filling, gold inlay cavity preparation; 4 tooth bridge, 1 Richmond abutment; 1 molar shell crown, 2 porcelain-faced dummies; set up full upper and lower set of teeth. "No reciprocity at present." Oral Hygienists (females) examined and licensed; fee \$5.00. Examination simultaneously in Albany, Buffalo, and New York. Six year clause exempts from written examinations. Registration with clerk of (initial) county of practice. Annual re-registration with the Secretary of the Board prior to September 1st; fee \$2.00. *Secretary*, MINOR J. TERRY (Professional examinations), State House, Albany, New York.

*North Dakota:* Law amended 1915. Entrance requirements for state university or four years' High School and dental diplomas. Examinations, Second Tuesday in January and July, in Fargo; fee \$25.00. Practical requirements: "The making of gold foil and amalgam operations; a gold crown and a porcelain crown; and a set of teeth." Reciprocity with "Those states having and maintaining the same requirements." Reciprocity fee \$50.00. Examination in Fargo, July (second Tuesday). Renewal registration with the Secretary of the Board before July 1st each year, fee \$2.00. *Secretary*, W. E. HOCKING, Devils Lake, North Dakota.

*North Carolina:* New law, March 9, 1915. High School or equivalent, dental degree; January and June examinations in Durham. License fee \$20.00. No reciprocity. Practical examinations consist of one gold, one amalgam, and one enamel filling; also models of an edentulous mouth upon which applicant will be required to set up and articulate a full set of Trubyte teeth. Registration with Clerk of Superior Court and Secretary of Board. *Secretary*, F. L. HUNT, Asheville, North Carolina.

*Ohio:* Amended law, 1915. Requirements, First Grade High School Diploma; graduation from a dental college. Examinations fourth Monday in June and October, in State University, Columbus. License fee \$25.00. Practical requirements; Gold amalgam, and synthetic fillings;

articulating of a full denture and making a Richmond Crown. Reciprocity with District of Columbia, Iowa, Indiana, Kansas, Louisiana, Michigan, Minnesota, Nebraska, Tennessee, and Wisconsin. Next examination in Columbus. *Secretary*, HOLSTON BARTILSON, 150 E. Broad St., Columbus, Ohio.

*Oklahoma*: Law approved March 28, 1913. Requirements, High School and dental diplomas. Examinations, June and December in Oklahoma City. Practical requirements: Gold, amalgam and silicate fillings; full upper and lower dentures; bite plates with normal occlusion. License fee \$25.00. Interchange with Arkansas, District of Columbia, Indiana, Kansas, Missouri, Nebraska. *Secretary*, HARRY OVERBY, Ryan, Oklahoma.

*Oregon*: Law amended 1916. Dental degree required. June and November examinations in Portland or Salem. License fee \$25.00. No temporary permits and no interchange. *Secretary*, H. H. OLINGER, Salem, Oregon.

*Pennsylvania*: Amended law, 1915. Requirements: Four years' course High School or its equivalent, fifteen units (held prior to matriculation) and dental diploma. After January 1, 1921, dental degree from a four years' course registered dental college. Examinations, June and December, held simultaneously in Philadelphia and Pittsburgh. Practical requirements: gold and amalgam fillings; four-tooth bridge; upper and lower plate. License fee \$25.00. No interchange. Examination in Philadelphia and Pittsburgh, registration with the Secretary of the Board of Dental Examiners every year, fee \$1.00; and with the County Court at the beginning of practice. *Secretary*, A. H. REYNOLDS, 4630 Cedar Avenue, Philadelphia, Pa.

*Rhode Island*: Law amended 1918. Legal protection provided for examinee. High School and dental diplomas required. June examinations last week or first week in July, in Providence. Fee \$25.00. *Secretary*, EARNEST A. CHARBONNEL, Providence, Rhode Island.

*South Carolina*: Law amended 1911. Temporary licenses granted; examinations in June in Columbia. Undergraduates examined under Rule X. No reciprocity. License fee \$15.00. Examination in Columbia. *Secretary*, R. L. SPENCER, Bennettsville, South Carolina.

*South Dakota*: Law effective 1909. Five years' practitioners and college graduates examined. January and July examinations in Sioux



Falls. No reciprocity. License fee \$25.00. *Secretary*, L. S. SPENCER, Watertown, South Dakota.

*Tennessee*: Law amended 1913. Dental diploma required. June examinations in Nashville. Fee \$15.00. Reciprocity with Iowa, Kansas, Nebraska, and Ohio. Fee for incoming dentist \$15.00; outgoing dentist \$5.00. *Secretary*, WALTER G. HUCHISON, 308 Eve Building, Nashville, Tennessee.

*Texas*: Law enacted 1905. Temporary licenses optional with Board; fee \$2.00. Examinations without diploma, fee \$25.00. No interchange. Examinations in December, in Dallas. *Secretary*, HARRISON B. CAVE, 810-814 Wilson Building, Dallas, Texas.

*Utah*: Law amended 1909. Four years' High School and dental diplomas required; non-graduates examined. Licenses without examination may be granted at the discretion of the Board. Annual registration with the secretary of the Board; fee \$1.00. June and November examinations held in Salt Lake City; fee \$25.00. Reciprocity with none; law permits it. *Secretary*, J. F. CHRISTIANSON, 1002 Walker Bank Bldg., Salt Lake City, Utah.

*Vermont*: Law amended 1912. High School and dental diplomas required. Examinations, last Monday in June, in Montpelier. Fee \$25.00. Reciprocity with Illinois, Iowa, Indiana, Kentucky, Maine, Nebraska, and New Jersey. Registration with Secretary of State. *Secretary*, H. F. HAMILTON, Newport, Vermont.

*Virginia*: Law amended 1914. High School or equivalent (twelve Carnegie units), and dental diplomas required. Examinations June 10, 1919, in Richmond; fee \$10.00. May interchange, none reported. Practical examination consists of one gold filling, one four-tooth bridge, and upper and lower set of teeth. Annual registration in April with the Secretary of the Board; fee \$1.00. *Secretary*, J. L. WALKER, 303 Payne Building, Roanoke, Virginia.

*Washington*: Law amended 1913. Dental diploma required. May and November examinations in Spokane, fee \$25.00. *Secretary*, FRANK B. LYNOTT, 249 Peyton Block, Spokane, Wash.

*West Virginia*: Law amended 1915. Four years' High School and dental degree required. June examinations in Wheeling. License fee \$25.00. Certificate \$2.00. Interchange with New Jersey and the Dis-

trict of Columbia. Biennial registration with Secretary of Board; initial registration with the County Clerk. *Secretary*, H. H. SMALLRIDGE, Charleston, West Virginia.

*Wisconsin*: Law amended 1914. Requirements: Four years' High School, or fifteen units, and dental diplomas. June and December examination in Milwaukee, fee \$25.00. Practical requirements: Gold filling, inlay and shell crown, mouth examination; full denture with articulation. Interchange with Illinois, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, and Ohio. Practical examination includes, "Mouth examination, gold filling, gold inlay, gold shell crown, articulation of Full Denture." *Secretary*, F. S. TATE, Rice Lake, Wisconsin.

*Wyoming*: Amended law, 1905. No temporary permits. Dental degree required. Last Tuesday in June, examinations in Cheyenne. Fee \$25.00. I.—Theoretical examinations in Anatomy, Physiology, Histology, Bacteriology, Chemistry, Metallurgy, Oral Surgery, Anæsthetics, Operative and Prosthetic Dentistry, Materia Medica and Therapeutics, Prophylactics and Orthodontia. II.—Practical work will also be required; amalgam, cement and gold foil fillings; inlay, crown and bridge work and plate. No interchange. *Secretary*, PETER APPELL, P. O. Box 643, Cheyenne, Wyoming.

*Alaska*: New law, 1913. All applicants examined; dental degree required. Theoretical and clinical examinations held the second Monday in January and July, in Juneau. Fee \$25.00. Law permits reciprocity. "Theoretical examinations include Operative and Prosthetic dentistry; Osteology, Dental and General Anatomy, Histology, Bacteriology, Physiology, Pathology, Chemistry, Metallurgy, Materia Medica, Therapeutics, Orthodontia and Anæsthetics. Demonstrations in Operative and Prosthetic Dentistry will be required, also Prognosis and Diagnosis. All applicants must furnish their own material for demonstrations. If the examinations prove satisfactory to said Board of Examiners, they shall issue a certificate of registration to the person examined." Annual registration prior to July 1st; fee \$4.00. *Secretary*, ELMO H. KASER, Juneau, Alaska.

*Hawaii*: Law completely revised 1917. Dental diploma required. Practical and theoretical examinations held in January and July at Honolulu, in the usual subjects. Operative: root filling and malleted gold filling; cavity selected by examiner. Prosthetic: Upper and lower dentures and a crown or bridge. Orthodontia: Regulating appliance, case

selected by examiner. No interchange. License fee \$20.00. Annual registration with Secretary of Board, January 1st; fee \$2.00. *Secretary*, C. B. HIGH, 53-55 Young Bldg., Honolulu, Hawaii.

*Porto Rico*: Law of 1917. Examination with or without diploma. Practical and theoretical examinations held during February and August in San Juan. Examination fee \$20.00. Certificate \$5.00. *Secretary*, L. R. NOA, 6 San Justo, San Juan, Porto Rico.

*Philippine Islands*: New law, 1915. Temporary licenses issued, fee \$5.00. Dental degree required. Examinations held during January and July each year at Manila. License fee \$10.00. No reciprocity. *Secretary*, MIGUEL DE LA CONCEPCION; address T. PINPIN No. 25, Manila, P. I.

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## CANADA

### REQUIREMENTS FOR LICENSE TO PRACTISE DENTISTRY

Dental students are informed that a University degree in Dentistry does not always give a right to practise the Profession of Dentistry. It is necessary to conform with the Dental laws of the Country or State, Island or Province in which it is proposed to begin practice. Every province in Canada at present has its special requirements for its license and in most provinces a special standard of general education is insisted upon before beginning the study of Dentistry. Students who intend practising in Canada are advised to register their qualifications in the Province in which they intend to practise at the *beginning* of their course in Dentistry.

### DOMINION DENTAL COUNCIL

The Dominion Dental Council of Canada is a central organization under the control of the dental profession of Canada. Its object is to erect and maintain a standard of education and ethics for the dental profession, and to conduct professional examinations and issue Certificates of Qualification which shall be accepted without further examination by the provinces. For information concerning the requirements of the Dominion Dental Council, apply to Dr. W. D. Cowan, Secretary of the Dominion Dental Council, Regina, Sask., or to the Dental Registrar of any Province.

Seven of the nine Canadian Provinces, i. e., all but Quebec and British Columbia, have entered into an agreement whereby the holder of a license granted by the Council may practise in any of the subscribing provinces on the following conditions:

- (1) Holding a matriculation certificate of the proper standard.
- (2) Passing the examinations set by the Council.
- (3) Paying the local provincial registration fee.

For Matriculation, the Council accepts the Junior Matriculation of the Province of Ontario or Matriculation into the Faculty of Arts of any Canadian University.

#### DOMINION OF CANADA, AND ISLANDS

Dominion Dental Council of Canada, address for full information  
W. D. Cowan, Sec'y, Regina, Sask.

<i>Alberta:</i> James McPherson, 205 Moser Ryder Block, Edmonton, or Cecil E. Race, Registrar, Univ. Alberta, Edmonton.—Spring and Fall—Edmonton . . . . .	\$50.00
<i>British Columbia:</i> Sec'y H. T. Minogue, 510 Granville St., Vancouver.—June, November—Vancouver . . . . .	50.00
<i>Manitoba:</i> C. P. Banning, Winnipeg. "There will be no examinations until after the war, for license."—2nd Monday in January and July—Winnipeg . . . . .	40.00
<i>New Brunswick:</i> F. A. Godsoe, 74 King St., St. John.—4th Tuesday in June and September—St. John . . . . .	35.00
<i>Nova Scotia:</i> G. K. Thomson, Halifax.—May and September—Halifax . . . . .	50.00
<i>Ontario:</i> W. E. Wilmott, 96 College St., Toronto.—May, date selected—Toronto . . . . .	40.00
<i>Quebec:</i> Eudore Dubeau, 308 Sherbrooke, Montreal.—April and October—Montreal . . . . .	60.00
<i>Saskatchewan:</i> A. R. Weir, Saskatoon.—June or July—Saskatoon . . . . .	35.00
<i>Yukon:</i> A. J. Gillis, Dawson.—Date fixed by Board—Dawson . . . . .	25.00
<i>New Foundland:</i> T. P. Smith, 203 Water Street, St. Johns.—First Tuesday in July—St. Johns . . . . .	50.00
<i>Prince Edward Island:</i> J. S. Bagnall, Charlottetown.—July and September—Charlottetown . . . . .	25.00

Diplomas of recognized dental colleges registered without examination.

## PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.

September 7, 1918.\*

DEAR DR. SMEDLEY:

Was sorry I did not get to see more of the Denver group while attending the National Dental Association meeting at Chicago. However, I was very proud of the Denver Unit's showing and have heard nothing but complimentary remarks about the clinic. Every one I have talked with concedes the honors to Denver as having the best clinic. Hurrah for our side!

Col. Scott, our Commanding Officer, has asked me to give the Dentists in Camp Grant a general idea of how the Denver Unit does it. I told him I would ask you some questions on points that are not quite clear to me and then do my best. Our Colonel is one of Dentistry's best boosters, and a man deeply interested in all things which would tend to make better any branch of our profession. The things he said about your group I won't repeat here, because I am sure you all are vain enough as it is. However, we would all appreciate hearing from a member of such a splendid quartette. There are about thirty of us here, and we hold weekly meetings and discuss topics of interest. Last week Dr. Glessner of Denver gave us a talk on root canal work, and this week Dr. G. and yours truly give a clinic on indirect inlays. We have some real heated discussions.

My kindest to all Denver friends, and with best wishes to you, I am  
Fraternally yours,

R. C. HUGHES, 1st Lieut, D. R. C.  
Base Hospital, Camp Grant, Illinois.

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\*We have here made an exception to our usual rule of never publishing in Practical Hints any part of letters or answers but the bare questions and answers. We make this exception because of the general interest in all of the activities of our boys in khaki. And because it explains also how I happen to be asked these questions relative to the work of the Denver unit.

*Question.*—How do you prepare your cavities to get your wax models out without bruising or distorting? And how do you get those wonderfully smooth, beautiful surfaces that permit the seating of the finished inlay with finger pressure? Should cavity margins be bevelled?

Do you chill the wax pattern before removing from the cavity? Does it matter if the model stands over night before investing? What make of wax do you use?\*

Sept. 30, 1918.

DEAR DR. HUGHES:

Your favor of 7th inst. at hand, and feel greatly complimented to be asked to contribute my mite.

Our clinics consisted essentially of the Taggart technique, which was first given to the profession in 1907. The unusual and satisfactory results that we were able to show are due simply to careful attention to each minute detail of the process and to a thorough knowledge of the underlying principles involved. Answer to your question follows:

Cavity Preparation:

1. Cavities should be very carefully prepared with all lines slightly converging.
2. The cavo-surfaces should be very smooth and free from the slightest undercuts or irregularities. These surfaces can best be obtained with fine carborundum stones.
3. All cavity margins should be beveled for the protection of short enamel rods and for the final burnishing of the margins of the inlay.

Wax Model:

1. All waxes show an enormous coefficient of expansion and contraction when subjected to changes of temperature. Therefore never chill the wax pattern in the mouth, and be sure that it is maintained at a uniform room temperature until it is invested and until after the investment is thoroughly set.
2. A marked coefficient of elasticity is a prominent characteristic of all waxes giving them a strong tendency to return to form when stretched, compressed, bent, twisted or worked in any way. This tendency is nowhere near so strong of course as is the case with rubber, but still it is sufficient to make misfits of many of our inlays unless models are maintained at a uniform temperature and invested immediately after making.
3. We use the Taggart wax because it carves most beautifully when cold and is not easily distorted at open mouth temperature.

Faternally yours,

V. C. SMEDLEY.

\*Dr. Hughes asked a number of other questions, which because of lack of space will be omitted until a future issue.



## QUESTIONS AND ANSWERS

*Editor DENTAL DIGEST:*

I have a little girl 9 years old whose four anterior teeth are very prominent. There is quite an over-bite when she closes her jaws. Would extracting her temporary cuspids and bicuspid cause these upper teeth to come more in line with the lowers? What would you advise?—H. J. H.

ANSWER.—I most certainly would advise against the extraction of the temporary cuspids and premolars to make room for the incisors to come down. The extractions could only result in greater troubles later or when the permanent cuspids and the bicuspid attempt to erupt with no room to get into their correct positions. The girl should be referred to an Orthodontist who would probably expand the arches laterally and retrude the incisors at the same time. If the posterior teeth are in correct occlusion sometimes a marked improvement can be brought about by having the child form the habit of pressing frequently, firmly and steadily downward and backward upon the protruding incisors.—V. C. S.

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*Editor DENTAL DIGEST:*

In your answer to Dr. L. K. about arsenic injured gum, you said you "never use arsenic in any case." What do you use?

DR. WILLIAMS.

ANSWER.—Permit me to submit as answer to your question "What do you use?" an answer submitted by Dr. H. S. Rasi of Brooklyn, New York, which happens to concur absolutely with my opinion and practice; except I might add that I never devitalize a tooth by any method or for any purpose, except it have an inflamed, congested or diseased pulp.—V. C. S.

*Editor DENTAL DIGEST:*

In answer to Dr. L. K.'s question about preventive treatment drug to arsenic sloughing of the tissues when used for devitalization of the tooth, I would suggest to him not to use arsenic at all for devitalization. A progressive dentist would use cocain and novocain under pressure anesthesia or infiltration or conductive anesthesia.

H. S. RASI.

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*Editor DENTAL DIGEST:*

In reference to inquiry of Dr. R. H. Wilds in August Practical Hints regarding the removal of a broken needle point in the root of a central incisor, I would recommend the saving of the tooth, and not extraction,

as suggested by V. C. S. (1) A radiograph of the teeth should be taken to find out the location and size of the broken needle and the condition of the apical region. (2) I would enlarge my cavity toward the centre of the lingual surface to get a vertical access to the canal. Then I enlarge the orifice of the canal to get a good view of the needle point, then try to draw it out with No. 17 explorer. If this does not remove it I would run Peeso's extra fine canal reamer forward and backward in the canal just a few millimeters beyond the broken point and it will come out. If this fails I use Iodine, trichlorid solution to dissolve the metal in the canal, or break the protruding part and leave the point in the wall. It does not do any harm if the canal is thoroughly treated and filled. (3) The tooth should be treated with formocresol or ionization (etc.) or any method successfully used. The canal is to be filled with chloropercha and guttapercha points. (4) A radiograph should be taken to find out whether the canal is perfectly filled to the apex. (5) Any dentist who recklessly extracts any of the front teeth would commit an unpardonable crime, unless the infection extends from the apical region to the gingival margin and accompanied by a fistula on the latter area; we have now-a-days successful methods to combat the infection in the single rooted teeth and save them. For the last two years I have not extracted any front teeth but have saved hundreds of them.

H. S. RASI.

This answer to my suggestion to R. H. Wilds is good. It is high time that opinions on both sides of this most important subject should be freely and frankly presented. The procedure described certainly shows the hand of a careful, skillful and conscientious operator.

What, however, in your mind becomes of the exhaustive and scientific reports of Dr. Price and his co-workers in the Dental Research Commission, as well as of numerous individuals which tell us that there is *no* successful method of treating and filling infected dead teeth? That cultures are readily produced from the roots of teeth extracted after having been treated and filled by the most careful and approved methods; and that dead teeth, especially if they have been in a state of chronic irritation for some time, no matter how thoroughly they may have been treated, are decidedly a menace to the health of any individual who may have or later develop a special susceptibility to the streptococcus infection. I do not in my own practice, however, as may have been inferred from the answer referred to, insist upon or recommend the extraction of all dead teeth. I advise the X-Ray always. But where patient's health is O. K., will often permit the retention of a number of dead teeth that have been carefully treated and filled, believing that the likelihood of harm to the

individual, from the slight amount of infection present is less than would be the injury to them from having their masticating apparatus impaired by extraction.—V. C. S.

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*Editor DENTAL DIGEST:*

I saw a question asked in August number of the *DENTAL DIGEST*, in regard to arsenic. I have not seen an answer in September issue, and I thought I would give you the method I use.

After the arsenic is sealed in the tooth (of course the rubber dam is necessary) I take precipitated hydrate of iron, known better as dialyzed iron, wash the teeth with a piece of cotton saturated with it, then remove the rubber dam and wash the gums the same way. Any druggist can prepare the solution. I have cured a case of arsenical necrosis by curreting the part good and then applying dialyzed iron a few times.—

F. J. B.

P. S. Please advise me what to use for sensitive teeth. This patient has no cavities, no receding gums, but teeth sensitive to cold, warmth, sweets and sour. I have used milk of magnesia and bicarbonate of soda, but find no relief.

ANSWER.—Is there occlusal abrasion exposing the dentine on some of the cusps? If so, this may be the cause of the sensitiveness. Then you can help the situation by painting these abraided surfaces with a saturate solution of silver nitrate and burnish thoroughly with a hot burnisher or an electro-cautery. If, however, patient has no abrasion, no erosion, no cavities or no recession, but still has sensitiveness, tell her to avoid as far as possible the things that cause pain, and thank God for the blessing of so fine a set of teeth. I myself have such a set—very sensitive to heat, cold, etc., but I am not expecting to find a remedy until old age comes with pulp recession.—V. C. S.

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### ANCIENT DENTISTRY

In the former villa of Pope Julius III, in Rome, which is now used as an Etruscan museum, there is exhibited an excellent specimen of a gold dental bridge in proper position in a skull taken from an Etruscan tomb in Civita Castellana, a town in Etruria, situated upon the proposed site of Veji. The latter town was utterly destroyed before the time of Christ, so a conservative estimate would put the age of this dental bridge at over 2,000 years.

# THE BEST OF CURRENT THOUGHT

[*Dental Review*, October, 1918]

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Dedication at the Memorial to the late Dr. G. V. Black. By A. W. Thornton.

### *Proceedings of Societies*

Illinois State Dental Society, Fifty-Fourth Annual Meeting Held at Bloomington, May 14-17, 1918.  
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### *Editorial*

Dental Service in the Army, and Dental Education as Influenced by Present War Conditions.

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Pyorrhea—Its Cause and Treatment. By Dr. E. P. Beadles, Norfolk, Va.

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- The Past and Present of Operative Dentistry. By B. Holly Smith, D.D.S.
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- Report of the Committee on Practice—Dental Society of the State of New York. By Paul R. Stillman, D.D.S.
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- Band of a Gold Crown in the Bronchus: Report of a Case. By Chevalier Jackson, M.D., and Wm. H. Spencer, M.D.
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- Army and Navy Dental News and Notes.
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- An Urgent Government Need: Stenographers and Typists Wanted.

*Society Notes and Announcements*

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- Forsyth Dental Infirmary for Children.
- National Mouth Hygiene Association.
- Boards of Dental Examiners.
- Monthly Record of Patents Relating to Dentistry.

## FOR INSTANCE: BOLSHEVISTS AND SOCIALISTS

It has become apparent that whole masses of human population are, as a whole, inferior in their claim upon the future, to other masses; that they cannot be given opportunities or trusted with power as the superior peoples are trusted; that their characteristic weaknesses are contagious and detrimental in the civilizing fabric; and that their range of incapacity tempts and demoralizes the strong. To give them equality is to sink to their level, to protect and cherish them is to be swamped in their fecundity.—H. G. WELLS.

## EXTRACTIONS

To be or not to be; that's the questionnaire.

The apple of the eye is rather visionary fruit.

Always view a scene with a mule in it from the foreground.

Never cry over spilled milk. There is enough water wasted as it is.

The trouble with most men is that they have to die to be appreciated.

A cynic is a man who would make a fool of himself in the society he satirizes.

When he asks her what the new hat cost, before saying whether he likes it, the honeymoon is over.

She: "Will you love me as much in December as you do in June, dear?"

He: "More, darling. There's one more day in December."

Garfield: "You can fuel some of the people some of the time, but you cannot fuel all of the people all of the time."

"Have you put up any sauerkraut this fall, Schmitt?"

"Times was so hardt because of the war that I only put oop fife barrels in case of sickness."

Save your whale skins. Don't feed them to the cat. They can be used to make excellent shoe leather, as the U. S. Bureau of Fisheries has discovered.

"Ah, Jones," said the botanist, "I see a pair of overalls working in the field. I wonder if it is a man or a woman?"

"You say it's working? Then it's a woman!"

The naked fields lie wanton to the breeze;

The hills are bare, the groves unfrocked;

Nude are the shivering limbs on shameless trees—

What wonder that the corn is shocked!

The condemned murderer was to be hanged at noon. He sat in his cell and read the Bible.

The Sheriff appeared and notified the condemned man that his execution was postponed for a month.

The condemned man laid down the Bible and lit a cigarette.

"How did you come to break off your engagement with Miss Snowball?" asked Uncle Moses of a dorky.

"In the fust place, Uncle Moses, she wasn't berry young, and she didn't hab no money, and jawed like de debbel, and, secondly, she would not hab me, and went and married another niggah, so I tuk de advice ob my frens and jess drapped her."

The guests entered the room glumly and silently. Not a sound was heard and not a word spoken as they took their places. Only a muffled scraping of chairs arose as they seated themselves. The silence was depressing and unearthly—you could imagine the room peopled with ghosts. Then a deafening clamor arose and the noise was like the rush of waters at Niagara. Soup was served!

"Yassah! I's done 'plied for a divoce fum muh wife, 'count o' her dadblamed stravgance," said disgruntled Brother Waugh. "Lemme tell yo': We had a 'spute about a po'tion o' de scripters, 'twuz, and I dess simply slapped her down to press muh ahgymunt on her. 'Stidder knowledgin' de wrong she riz and saturated me on de head wid a skillet. Smacked me so hard, sah, that muh skull popped right th'oo de bottom of it, and I hatter pay de blacksmith hafter dollah to file de inst'ument off'n muh neck. What kinduh way am dat to waste a man's money?"

A well-known lady artist resident in Rome, relates that while standing one day near the statue of the Apollo Belvidere she suddenly became aware of the presence of a countrywoman. The newcomer, a well-to-do-looking woman, introduced herself as Mrs. Raggles of —, Missouri, and then asked:

"Is this the Apollo Belvidere?"

Mrs. H. testified to the identity of the work, and the tourist then said:

"Considered a great statue?"

The interrogated lady replied that it was generally thought to be one of the masterpieces of the world.

"Manly beauty and all that sort of thing?" said the lady from the land of the setting sun.

"Yes," responded the now amazed artist. "It is said to be one of the noblest representations of the human frame."

"Well," closing her Badcker, and with arms akimbo, taking a last and earnest look at the marble, "I've seen the Apollo Belvidere, and I've seen Raggles; and give me Raggles."



## FUTURE EVENTS

December 16, 1918.—The State Board of Dental Examiners will hold their next examination in Dallas, Texas, at the Baylor University College of Dentistry. No reciprocity with other States, and diplomas not registered. Fee \$25.00. Applications should be in the hands of the Secretary by December 11, 1918. For further information apply to—HARRISON B. CAVE, D.D.S., *Secretary*, Suite 810-812 Wilson Bldg., Dallas, Texas.

December 3, 4, and 5, 1918.—The Fifty-Third Annual Meeting of the Ohio State Dental Society will be held in Memorial Hall, Columbus. An excellent program of papers and clinics is assured with some new features of especial interest. Members of other State Societies in good standing are cordially invited to meet with us.—F. R. CHAPMAN, *Secretary*, 305 Schultz Bldg., Columbus, O.

November 21, 22, and 23, 1918.—The Dental Commissioners of Connecticut will meet at Hartford, to examine applicants for license to practice dentistry, to examine dental hygienists for license to practice and to transact any other business proper to come before them. For blanks and further information, address—EDWARD EBERLE, *Recorder*, 902 Main St., Hartford, Conn.

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The next meeting of the Board of Dental Examiners for the purpose of examining applicants for a license to practice dentistry in the State of California will be held in the City of San Francisco at the Dental College, University of California, beginning on the 9th day of December, 1918. All applications for examination must be filed with the Board on December 9th at 9:00 A. M. Each application must be accompanied by (1) the fee of \$25.00; (2) diploma and license from other states; (3) diploma from an accredited high school giving a four year course of instruction or a certificate signed by a State Superintendent of Public Instruction (or similar officer) to the effect that such applicant has had scholastic preparation in all respects equivalent to that demanded for graduation from an accredited high school giving a four year course of instruction in the state from which such certificate is issued; in lieu of such high school diploma or certificate, an applicant who has been licensed in some other state of the United States for a period of at least five years may file his state license; (4) a testimonial of good moral character; (5) a recent unmounted photograph.

By order of the Board of Dental Examiners of Calif.—C. A. HERRICK, *Secretary*, 133 Geary Street, San Francisco.

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The next examination of the Pennsylvania Board of Dental Examiners will be held in Philadelphia and Pittsburgh on Tuesday, Wednesday, Thursday and Friday, December 3, 4, 5 and 6, 1918, at Musical Fund Hall in Philadelphia and the University of Pittsburgh, Pittsburgh. The practical examination will be held on Friday, December 6th, the last day. Application papers can be secured from the Department of Public Instruction, Harrisburg. For further information address the secretary, ALEXANDER H. REYNOLDS, 4630 Chester Avenue, Philadelphia.

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November 11-16, 1918.—The Indiana State Board of Dental Examiners will hold the next examination at the State House, Indianapolis. For application and information write DR. H. C. McKITTRICK, *Secretary*, 605 Hume-Mansur Bldg., Indianapolis.

## COMMON SENSE

Common sense makes an admirable and necessary background for the mind; but unless it be watched by a lofty disquiet, ever ready to remind it, when occasion demand, of the infinity of its ignorance, it dwindles into the mere routine of the baser side of our intellect.—MAETERLINCK.

## THE ROAD TO SUCCESS

You do not have to fight—  
You do not have to struggle—  
You only have to know.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS  
OF AUGUST 24, 1912

Of THE DENTAL DIGEST  
at New York, N. Y.

Published monthly  
for October 1, 1918.

State of New York }  
County of New York } ss.

Before me a Notary Public in and for the State and county aforesaid personally appeared John R. Sheppard who, having been duly sworn according to law, deposes and says that he is the Secretary of The Dentists' Supply Co., publishers of THE DENTAL DIGEST, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

NAME OF PUBLISHER	POST-OFFICE ADDRESS
Publisher, THE DENTISTS' SUPPLY COMPANY	Times Square, 220 W. 42nd St., New York
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Business Manager, GEORGE WOOD CLAPP	Mamaroneck, N. Y.

2. That the owners are:

NAME OF OWNER	POST-OFFICE ADDRESS
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De Trey & Co., Ltd., is a corporation organized under the laws of England, with authorized capital stock of 500,000 shares of One Pound each, ownership of which is scattered over a considerable part of Europe and includes a long list of names unknown to us, and probably a number of banks and other corporations.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

THE DENTISTS' SUPPLY COMPANY  
J. R. SHEPPARD, Sec'y & Treas.

Sworn and subscribed before me this 23d day of September, 1918.

[SEAL]

GRETCHEN M. BALZ  
Notary Public Westchester County  
Certificate filed in N. Y. County Clerk's No. 429  
N. Y. County Register's No. 9366

—My commission expires March 30, 1920